

Research Report DFE-RR011

The Educational Performance of Children of Service Personnel

This research was commissioned before the new UK Government took office on 11 May 2010. As a result the content may not reflect current Government policy and may make reference to the Department for Children, Schools and Families (DCSF) which has now been replaced by the Department for Education (DfE).

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Introduction to the Analysis of Service Children

Policy Background

In 2008 the UK Government published a service personnel command paper: “The Nation’s Commitment: Cross Government Support to our Armed Forces, their Families and Veterans”.¹ One of the main principles of this paper was to prevent any disadvantage occurring to members of the armed forces, their families and veterans. This included potential impacts on housing, employment and the educational attainment of the children of armed forces’ personnel. Therefore, there was a need for the Department for Education to review service children’s performance to determine whether any underachievement was seen due to their circumstances.

A service child identifier was introduced into the Department for Education’s school census in 2008. This indicates if a child has a parent or parents who are service personnel, serving in regular military units of all HM Forces and exercising parental care and responsibility.² The school census is submitted by maintained schools on a termly basis, with a more thorough return on an annual basis (in January). The census is comprised of information on schools and their pupils, including their characteristics. This information is fed into the National Pupil Database (NPD), which is a database of all pupils including links with their attainment data from the Early Years Foundation Stage Profile (EYFSP) to Key Stage 5. The new service child flag enables service children’s background context to be linked with their attainment data.

This topic note analyses the educational attainment of service children and their characteristics using the NPD. However, the current service child identifier does not allow the Department for Education to differentiate between the various HM Forces a parent may belong to and the figures held are likely to underestimate actual numbers. The service child flag was only introduced in the school census in 2008 and the introduction of a new data item can result in under-reporting due to a lack of knowledge about the flag and problems identifying the correct groups of pupils. Parents may not wish for their children to be identified as children of service personnel, in which case pupils may fall into a “Refused” category.³ 2009 was the second year the

¹ Report may be found here:

<http://www.mod.uk/DefenceInternet/AboutDefence/CorporatePublications/PersonnelPublications/Welfare/TheNationsCommitmentCrossgovernmentSupportToOurArmedForcesTheirFamiliesAndVeterans.htm>

² This is only relevant to children whose parents are designated as Personnel Category 1 or 2, which are shown on the MoD website:

<http://www.mod.uk/DefenceInternet/AboutDefence/CorporatePublications/PersonnelPublications/Welfare/PersonalStatusCategoryDefinitions.htm>

Personnel are placed into these categories for the purpose of determining entitlements to benefits.

³ Valid returns to the service children identifier are: ‘yes’, ‘no’ and ‘refused’, with an additional code of ‘unknown’ to be held by the school to indicate no response given or another reason for no information. This field is collected in the January census only, for all pupils on roll on census day. The field is default filled with “no” to reduce the burden on schools. Guidance for

information was collected, and the main scope of this topic note is to present the 2009 data. The numbers of service children being identified between 2008 and 2009 have indeed risen, reflecting more accurate data collection from the 2009 service child identifier.

The NPD holds information for pupils in all schools in England; however, information on pupils in independent schools is limited. In 2009, around 8,500 service children were educated in overseas schools as their parents were on foreign postings. The MOD manage several of these schools through their agency: Service Children's Education (SCE) and SCE covers 26 schools in Germany, 6 in Cyprus and schooling facilities in 9 other locations. These schools follow the English National Curriculum and are inspected by Ofsted; Chapter 6 discusses the attainment of service children in these schools in more detail.

Analyses were undertaken to identify any attainment gaps between service children in maintained schools in England and their peers. The 2008 analyses were presented to the Armed Forces External Reference Group, held at the Cabinet Office in January 2010; this group reports directly to Parliament on the Command Paper. This topic note brings together the previous analyses of service children's educational performance (Annex A) and provides new analyses for 2009.

A small-scale study was also undertaken by a team of the Department for Education's School Standards Advisors.⁴ This study involved a collection of case studies from schools with service children. It considers how service children are distinctive due to their mobility, social and emotional needs, attendance and parental involvement. The study worked to establish 7 main features of successful practice in maximising the progress of service children from armed forces' families and describes how support is needed for schools with varying numbers of service children.

completion of the school census may be found here:

<http://www.teachernet.gov.uk/management/ims/archive/arcdatacoll/sc2008>

⁴ This report on "How schools secure the progress of children from armed forces families" is yet to be published.

Numbers of Service Children in England

The total number of service children across each National Curriculum year group is shown in Table 1 below⁵. There were just under 37,000 pupils identified as service children in 2009; this represents 0.5% of all pupils in England in 2009. The percentage of service children in each year-group is calculated as a percentage of the total number of service children across schooling in the table. The rate of service children within each National Curriculum year-group is also provided. The highest numbers of service children were seen in Year 1 and Year 2: the infant school years. This may be expected given the age distribution of service personnel.⁶

Table 1: Numbers of Service children in 2009 across National Curriculum Year Groups

National Curriculum Year	Number of Service Children	% of Service Children in each NC year	Numbers of Non-Service Children	% of Non-Service Children in each NC year	Rate of Service Children in each Cohort
Nursery 1 & 2	850	2.3	327,870	4.4	0.3
Reception	3,470	9.5	562,030	7.5	0.6
1	3,860	10.5	552,370	7.4	0.7
2	3,620	9.9	533,820	7.1	0.7
3	3,200	8.7	536,760	7.2	0.6
4	3,380	9.2	546,860	7.3	0.6
5	3,230	8.8	561,800	7.5	0.6
6	3,180	8.7	568,360	7.6	0.6
7	1,950	5.3	576,150	7.7	0.3
8	2,400	6.5	566,870	7.6	0.4
9	2,220	6.1	573,870	7.7	0.4
10	2,140	5.8	585,940	7.8	0.4
11	2,030	5.5	577,640	7.7	0.4
12 and above	1,100	3	401,220	5.4	0.3
Not followed	x	x	1,590	0	x
Total	36,640	100	7,473,150	100	0.5

Figures include Maintained Nursery, Maintained Primary, State-Funded Secondary, and Special Schools identified as service children in England, January 2009, Source: School Census

Various estimates of the numbers of service children have been produced. A recent trawl (May, 2010) of Ministry of Defence personnel records shows just over 82,000 service children. Although there is no requirement for service personnel to enter children onto their record, the vast majority do. For overseas service personnel, there are allowances for their children and estimates are, therefore, likely to be accurate. Figures currently show 64,500

⁵ Table 1 is produced from school census figures; Tables 2 – 5 that follow are produced from the National Pupil Database. This results in some discrepancies in numbers of service children at the end of each Key Stage, which are due to data matching issues.

⁶ The broad age distribution of UK regular forces by age and rank at 1st April 2009 are available in UK Defence Statistics:

<http://www.dasa.mod.uk/modintranet/UKDS/UKDS2009/c2/table206.html>

service children in England. Once pre-school service children and those in devolved administrations are added, the 37,000 figure from the annual school census should approach this figure. Other estimates have also been put forward: (i) “The Overlooked Casualties of Conflict” research report from The Royal Navy and Royal Marines Children’s Fund charity gave a figure of 174,341 service children, which was derived from a question in a MOD survey (July, 2009)⁷; (ii) Ofsted have given an estimate of 90,000 to include overseas schools⁸; and (iii) another figure of 186,000 was provided by Mike Curtis, who chaired the Service Children in State Schools’ (SCISS) group. This estimate was given in a submission to the House of Commons Defence Committee enquiry into ‘Educating Service children’ in 2006.

Numbers of Service Children by Key Stage

Tables 2-5 show that 3,300 (0.6%) of the 2009 EYFSP cohort were identified as service children; this compares with 3,550 (0.7%) of the end of Key Stage 1 cohort, 3,150 (0.6%) of the end of Key Stage 2 cohort and 2,050 (0.4%) of the end of Key Stage 4 cohort. Under-counting of service children in maintained schools is almost certain to occur in the school census. In 2009, 250 (0.0%) responses on service children status were “Refused” at the end of Key Stage 4; the equivalent numbers for Key Stage 2, Key Stage 1 and EYFSP were 90, 65 and 69, respectively. There were also a number of “Unknown” recorded responses: 28,500 (4.9%) at end of Key Stage 4; 9,600 (1.7%) at end of Key Stage 2; 7,500 (1.4%) at end of Key Stage 1 and 5,800 (1.0%) at EYFSP. Furthermore, there were a number of “Missing” (blank) responses (between 0.4% and 1.3% of the cohort).

Table 2: Pupils at EYFSP in 2009

EYFSP	Frequency	Percentage of the cohort (%)
Service Child	3,300	0.6
Non-Service Child	548,000	97.4
Refused	70	0.0
Unknown	5,800	1.0
Missing data	5,600	1.0
Total	563,000	100

Figures include pupils in maintained mainstream and maintained special provision identified as service children in England, January 2009, Source: NPD

⁷ UK Regular Forces Survey, Ministry of Defence. Statistics as at count on 1st July 2009, in Royal Navy and Royal Marines Children’s Fund paper “The Overlooked Casualties of Conflict”: <http://rnmchildrensfund.org.uk/new-report-launched-the-overlooked-casualties-of-conflict/>

⁸ As quoted in <http://rnmchildrensfund.org.uk/new-report-launched-the-overlooked-casualties-of-conflict/>. Paragraph 15 refers to the Ofsted Inspection Report, June 2005.

Table 3: Pupils at the end of Key Stage 1 in 2009

Key Stage 1	Frequency	Percentage of the cohort (%)
Service Child	3,550	0.7
Non-Service Child	519,000	97.5
Refused	65	0.0
Unknown	7,500	1.4
Missing	2,300	0.4
Total	532,000	100

Figures include maintained infant and primary schools and maintained special schools identified as service children in England, January 2009, Source: NPD

Table 4: Pupils at the end of Key Stage 2 in 2009

Key Stage 2	Frequency	Percentage of the cohort (%)
Service Child	3,150	0.6
Non-Service Child	553,000	97.4
Refused	90	0.0
Unknown	9,600	1.7
Missing	2,050	0.4
Total	568,000	100

Figures include pupils in maintained primary and maintained special schools identified as service children in England, January 2009, Source: NPD

Table 5: Pupils at the end of Key Stage 4 in 2009

Key Stage 4	Frequency	Percentage of the cohort (%)
Service Child	2,050	0.4
Non-Service Child	552,000	94.7
Refused	250	0.0
Unknown	28,500	4.9
Missing	7,500	1.3
Total	590,000	100

Figures include pupils in state-funded secondary and maintained special schools identified as service children in England, January 2009, Source: NPD

1. What is the International and UK Research Evidence on Issues Faced by Service Children?

Summary

- Evidence relating to the impact on service children's education is mixed: some research finds that being a service child can have a negative impact, other research finds no significant impact if the transition process is well-managed and other research suggests positive effects;
 - One study suggested older children and girls were most likely to suffer the most when a parent is deployed overseas. Older youths were found to have more problem behaviours such as fighting and, although girls were found to have fewer problems in school and with friends, they reported more anxiety than boys;
 - However, there is a large body of evidence that explains the positive aspects of being a service child; for example, many service children do achieve high levels of attainment and they often build strong bonds in their communities, shouldering extra responsibility while their serving parent is away;
 - There is difficulty in isolating factors that impact on a service child's education and learning; this is a complex relationship. It is generally felt that further research is needed to better understand the effects of parental deployment.
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This chapter begins by considering the challenges faced by service children, including emotional and psychological needs and school admissions issues. It then turns to consider the positive aspects of being a service child, such as educational outcomes and being part of a community.

1.1 Service Children and School

There are several sources of evidence on service children in schools. The Royal Navy and Royal Marines Children's Fund (2009) cite figures from a 2006 survey: MoD Royal Navy and Royal Marines Families Continuous Attitude Survey. Some key findings from this survey include:

- 43% of naval families have experienced problems finding a place for their children at the school of their choice;
- 64% of naval families have experienced problems with the differences in the standard of their child's education when changing schools;
- 62% of naval families have experienced problems with the difference in syllabus content when their child changes school;
- 57% of naval spouses said that their children's behaviour is different at school when their spouse is away.

The National Foundation for Educational Research (NfER, 2007) conducted a study into Service Children and their school performance. The final part of the study could not be completed due to problems with identifying how many Service Children there were in the educational system⁹. Despite this, some key findings included:

- Mobile pupils tend to under-perform;
- The effect of higher proportions of mobile pupils on the performance of the rest of the cohort seems to be positive rather than negative in secondary schools;
- Schools with service children perform overall no differently from other schools;

This is an example of where the evidence in this area may appear mixed. Other researchers have concluded that, despite the challenges faced by service children, they can still perform well academically (ERIC, 2003, and SCE, 2008)¹⁰. This evidence is explored further in Section 1.3: positive aspects of education for service children.

1.2 Other Challenges Faced by Service Children

Several studies have found that children in military families face certain emotional challenges. For example, a RAND Corporation study¹¹ (2009) examined the well-being of 1,500 children from military families across America. The study concluded that children in military families may suffer from more emotional and behavioural difficulties when compared to other American youths.

Older children and girls were found to suffer the most when a parent is deployed overseas. The study also found that having a parent deployed for a longer period of time and having a non-deployed parent who has struggled with emotional problems were important factors associated with whether military children would struggle themselves; *'the more time parents are away, the more likely it is that children will experience problems'*.

The RAND research (2009) found that, across all age groups, children from military families reported significantly higher levels of emotional difficulties than children in the general population. Also, about one-third of the military children surveyed reported symptoms of anxiety, somewhat higher than the percentage reported in other studies of children. In terms of school, older youths were found to have more difficulties with school and more problem behaviours such as fighting. Girls were found to have fewer problems in school and with friends, but reported more anxiety than boys.

⁹ Taken from *Royal Navy and Royal Marines Children's Fund* report (2009)

¹⁰ From *Providing Highly Mobile Pupils with an Effective Education* (2003) and *Mitigating Mobility – Guidance on Pupil Mobility* (2008)

http://www.serviceschoolsmobilitytoolkit.com/np_guidance_on_pupil_mobility.asp

¹¹ Taken from *Science Daily* (2009)

<http://www.sciencedaily.com/releases/2009/12/091207095503.htm>

1.3 Positive Aspects of Education for Service Children

There is a body of evidence that shares the positive aspects of being a service child. There is evidence that, despite the problems faced, many service children do achieve high levels of attainment in schools. For example, service children still consistently perform at academic levels equal to or surpassing the national average (ERIC, 2003) and this topic note certainly supports this finding.

SCE schools' results show that high mobility does not lead to any lowering of academic performance when it is well managed, *'either for individual students, cohorts or for schools'* (SCE, 2008). The management of the transition and mobility of service children is crucial in order to maintain academic performance.

Dobson et al (2000) explain that when children move around every few years with the Army, it is possible that familiar faces *'often turn up in new places'*.¹² They discuss this as a positive aspect of forces life where, in schools with a majority of pupils from service families, children have *'shared experiences at home and school and sometimes their parents are friends with other children before coming to the new area'* (Cited in Edwards, 2004). Upon examining the literature in this area, Edwards (2004) concluded that *'providing structure and support is in place for forces children, and their parents, there is no explicit reason to suggest that high mobility has an adverse effect on their social or academic progress'*.¹³ Dobson et al. (2000) concluded that while schools with forces children experience some of the same demands, they do not experience them to the same level as those with highly mobile groups. Dobson explained that this is because these schools do not have the same large numbers of existing pupils needing high levels of support and there is usually a support framework in place. The research also suggested that schools receiving forces children were more likely to receive records from other schools the child may have attended.

The Royal Navy and Royal Marines Children's Fund (2009) also identified several positive aspects of being a part of the service community. For example, children often take a great deal of pride, identity and belonging from their parent's role in the Armed Forces, and can build strong bonds and grow up quickly with the extra responsibility they shoulder while their serving parent is away. The report also explained how service children often learn to be more adaptable, making friends quickly and having a sense of perspective gained from living in multiple locations and communities.

Smrekar et al. (2001) reported findings of a year-long study looking at how Department of Defence schools have *'achieved high levels of student learning*

¹² In *Pupil Mobility in Schools* (1999)

http://www2.geog.ucl.ac.uk/mru/docs/pupil_mobility.pdf

¹³ Taken from *Service Children's Education: An exploration of the Strategies employed to mitigate the adverse effects of pupil mobility on social and academic progress* (2004)

http://www.serviceschoolsmobilitytoolkit.com/ap_research.asp

*among all the students they serve*¹⁴. Both domestic and overseas schools were found to score at or near the top of all US states in reading and writing on the 1998 National Assessment of Educational Progress. One of the authors' key findings was that, *'Department of Defense schools combine in-school instruction with out-of-school activities and community conditions, which produces an unusually productive set of educational opportunities for students, particularly minority students'*. This study found that the success of Department of Defence schools in achieving high academic standards rests on a combination of in-school and out-of-school factors, such as a strong sense of community and a military commitment to education and accountability. The study (Smrekar et al. 2001) found that *'the overall performance of DoDEA students on the 1998 NAEP reading and writing assessments was impressively high'*. For example, some key findings from the research include:

- In 8th grade writing, 38% of DDESS students and 31% of DoDDS students scored at the level of proficient or higher, both above the national average of 24%;
- In 8th grade reading, 37% of DDESS students and 36% of DoDDS students were at the proficient level or higher, compared to a national average of 30%.

Although not claiming to establish a causal relationship, the study went on to identify several factors that may contribute to high levels of pupil achievement in these schools for service children. Examples include: having high expectations, a high level of teacher quality, investing in pre-school and after-school childcare, having small schools sizes and reflecting a 'corporate commitment' from the US military (for example, promoting parental involvement in school and home-based activities).

This chapter has considered the research evidence in this area, and highlighted a few of the challenges faced by service children. Despite these challenges, there are many positive aspects to being a service child. The next chapter will discuss the distribution and characteristics of service children in England, and how they compare with their peers.

¹⁴ *March Towards Excellence: School Success and Minority Student Achievement in Department of Defense Schools* (2001)
<http://govinfo.library.unt.edu/negp/reports/DoDFinal921.pdf>

2. What Are the Characteristics and Distribution of Service Children?

Summary

- Hampshire and Wiltshire Local Authorities have the highest numbers of service children at both the end of Key Stage 2 and Key Stage 4;
 - Service Children are less likely to be deprived than their non-service peers, as assessed by free school meal eligibility and IDACI: a measure of the deprivation of an area in which a child lives;
 - Service children are generally less likely to be identified as having a special educational need: fewer service children are identified as school action or school action plus across the Key Stages. However, similar proportions of service and non-service children are seen to have a SEN statement;
 - Service children are more likely to change school than non-service children in both Primary and Secondary School. 58% of service children changed school during Key Stage 2 compared with 38% of non service children; at secondary school 6% of service children changed schools during their GCSE years compared with 2% of non-service children.
-

The previous chapter provided research evidence on children of service personnel and this chapter begins by exploring the distribution of these service children across England. The chapter then turns to consider the characteristics of service children, including eligibility for free school meals (FSM), prevalence of special educational needs (SEN) and relative deprivation using a neighbourhood deprivation measure: the income deprivation affecting children index (IDACI).

2.1 Distribution of Service Children

Service children are not evenly spread across England; there are particular areas where they are highly concentrated. The following maps of England show the grouped number of service children at the end of Key Stage 2 and Key Stage 4 by Local Authority; maps for Early Years Foundation Stage Profile and Key Stage 1 can be found in the appendix for chapter 2.

Chart 2.1 shows the distribution of service children at the end of Key Stage 2. There are high numbers located along the East of England, in the South West, in North Yorkshire, Surrey, Oxfordshire and Kent. Chart 2.2 shows the distributions at Key Stage 4; again there are high numbers along the South West of England, Kent, Lancashire, Surrey, Oxfordshire and North Yorkshire. At the end of both Key Stages, there are few service children in Greater London and in the Midlands.

Numbers of Service Children at KS2 by local authority of school in 2009 (maintained schools only)

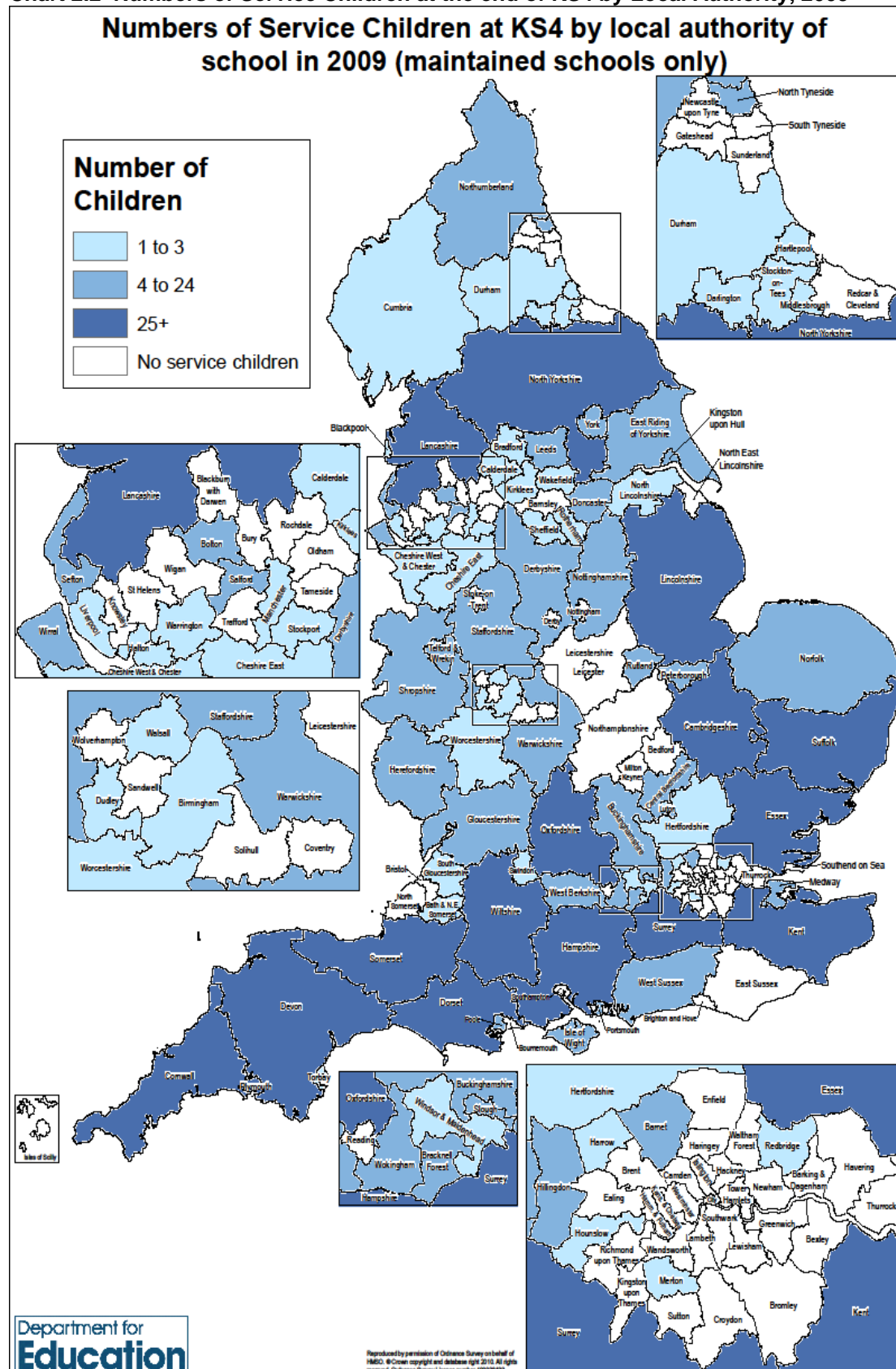
Number of Children

- 1 to 3
- 4 to 24
- 25+
- No service children

Department for Education

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Chart 2.2 Numbers of Service Children at the end of KS4 by Local Authority, 2009



Data from those pupils taking their Key Stage 2 tests (in the last year of Primary school) and their GCSE and equivalent exams in 2009 were used to aggregate service children numbers to Local Authority level. The 10 Local Authorities (LAs) with the highest percentages and/or highest numbers of service children **in Year 6 and Year 11** were identified and, of these, 6 LAs featured in both “top 10” lists. Table 2.1 and Table 2.2 below provide a final list of 13 LAs with high numbers/ percentages of service children at the end of Key Stage 2 and Key Stage 4.

Table 2.1: Local Authorities in England with the highest numbers and/or percentages of service children at Key Stage 2, 2009

Local Authority	Number of Service Children	Total number of pupils in LA at KS2	% Service Children in LA
Rutland	37	355	10.4
Wiltshire	360	5,069	7.1
Plymouth	154	2,713	5.7
Hampshire	479	14,097	3.4
North Yorkshire	206	6,210	3.3
Lincolnshire	190	7,755	2.5
Portsmouth	47	1,938	2.4
Oxfordshire	145	6,327	2.3
Cornwall	105	5,692	1.8
Shropshire	52	3,001	1.7
Somerset	85	5,684	1.5
Suffolk	75	7,564	1.0
Norfolk	75	8,662	0.9

In 2009, 10.4% of Rutland’s pupils were service children at the end of Key Stage 2. However, there were only 355 pupils in Rutland at the end of this Key Stage as it is a very small LA. Plymouth also had a high rate of service children, at 5.7%. For Wiltshire and Hampshire, 7.1% and 3.4% of their pupils were service children respectively and these LAs also had the highest numbers of service children in the final year of Primary school: 360 and 479.

Table 2.2: Local Authorities in England with the highest numbers/and or percentages of service children at Key Stage 4, 2009

Local Authority	Number of Service Children	Total number of pupils in LA at KS4	% Service Children in LA
Wiltshire	266	5,147	5.2
Plymouth	149	3,013	5.0
Hampshire	310	14,262	2.2
Cornwall	108	6,086	1.8
Lincolnshire	152	8,650	1.8
North Yorkshire	122	7,080	1.7
Slough	26	1,537	1.7
Oxfordshire	88	6,424	1.4
York	23	1,726	1.3
Rutland	6	480	1.3
Cambridgeshire	55	5,948	0.9
Somerset	47	5,759	0.8
Surrey	73	10,721	0.7

At the end of Key Stage 4 in 2009, Hampshire and Wiltshire again had particularly high numbers of service children: 310 (2.2% of their pupils) and 266 (5.2% of their pupils), respectively. Therefore, Hampshire and Wiltshire

have the highest numbers of service children at both the end of Key Stage 2 and the end of Key Stage 4. Plymouth also had a high rate of service children, at 5.0%.

2.2 Characteristics of Service Children

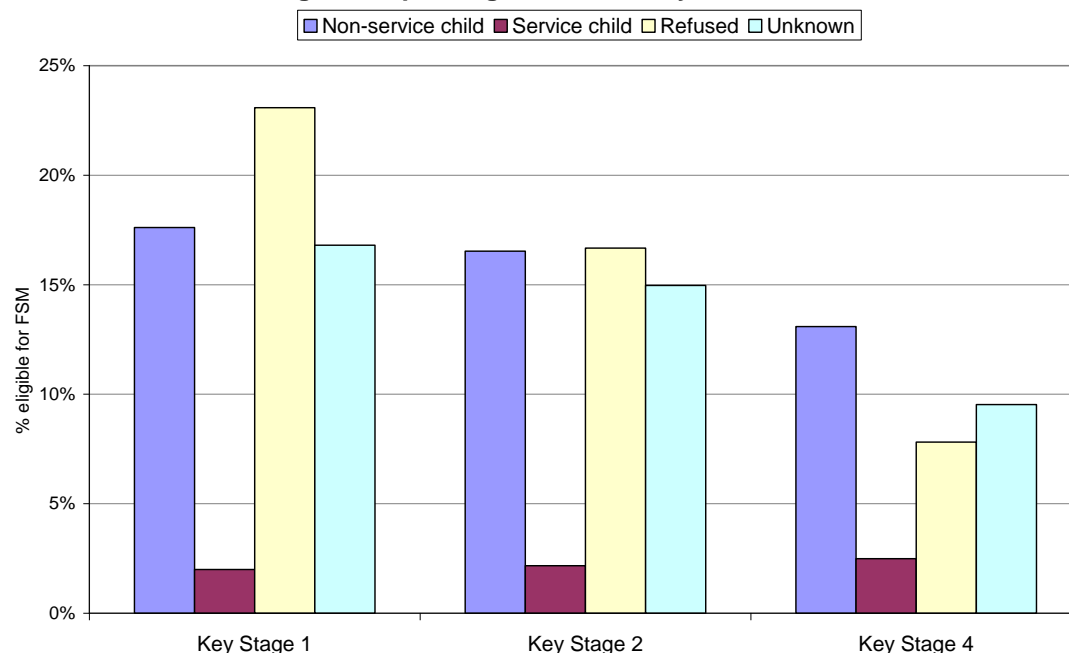
The characteristics of service children were compared with their non-service peers. In particular, relative deprivation, prevalence of special educational needs and movement between schools were analysed at the end of Key Stages 1, 2 and 4.

2.2.1 Relative Deprivation

Free School Meals (FSM) are offered to children of families who are in receipt of Employment and Support Allowance (Income Related), Income Support, Income Based Job Seekers Allowance or Guaranteed Element of State Pension Credit.¹⁵ Chart 2.3 shows that 18% of non-service children were eligible for free school meals at the end of Key Stage 1, 17% at the end of Key Stage 2 and 13% at the end of Key Stage 4. The respective figures for service children were 2% for end of Key Stage 1, 2% for end of Key Stage 2 and 2.5% for end of Key Stage 4. Service children were certainly less likely to be eligible for free school meals, which is to be expected since service children have at least one working parent. However, given that parents in HM Forces are unlikely to work part-time or be in a low-paid job, these results may still appear surprising. Although the census is taken for all pupils on role on census day and should reflect circumstances on that day, it is possible that a pupil is still being defined as a service child even if their parent has exited the Forces. Alternatively, there may be situations of family breakdown, where the couple have separated and household income is low for the parent who does not serve in HM Forces.

¹⁵ Pupils are recorded as eligible only if a claim for free school meals has been made and either (a) the relevant authority has confirmed their eligibility and a free school meal is currently being provided for them, or (b) the school or the LA have seen the necessary documentation that supports their eligibility.

Chart 2.3 Percentage of Pupils eligible for FSM by Service Child Identifier, 2009



Although FSM eligibility offers direct information on a pupil's circumstances, it provides no further information on the relative deprivation of the child. The Income Deprivation Affecting Children Index (IDACI) is one of the Indices of Multiple Deprivation (IMD) that is used to provide deprivation information based on the area in which a pupil lives. This allows each area to be ranked relative to one another according to their level of deprivation and the IDACI measure specifically considers the percentage of children under 16 within an area who were living in income-deprived families.¹⁶ The areas used break England into 32,482 areas, each one consisting of an average of 600 households.

Charts 2.4, 2.5 and 2.6 show neighbourhood deprivation information (IDACI) for service children for each of the Key Stages. IDACI scores are attached to pupils using school census information on home postcode and the indicator ranges from 0.00 (least deprived) to 1.00 (most deprived). The following charts refer to IDACI quartiles for ease of comparison: these show the proportion of pupils that fall into the top (most deprived), upper middle, lower middle and bottom (least deprived) 25% of IDACI scores.

¹⁶ Those families who are in receipt of Income Support and Job Seekers Allowance (Income Based) or in families in receipt of Working Families Tax Credit/Disabled Person's Tax Credit whose equivalised income is below 60% of median before housing costs. IDACI information was last updated in 2007; for further information see: <http://www.communities.gov.uk/communities/neighbourhoodrenewal/deprivation/deprivation07/?view=Standard>

Chart 2.4 Relative Neighbourhood Deprivation at Key Stage 1 by Service Child Identifier, 2009

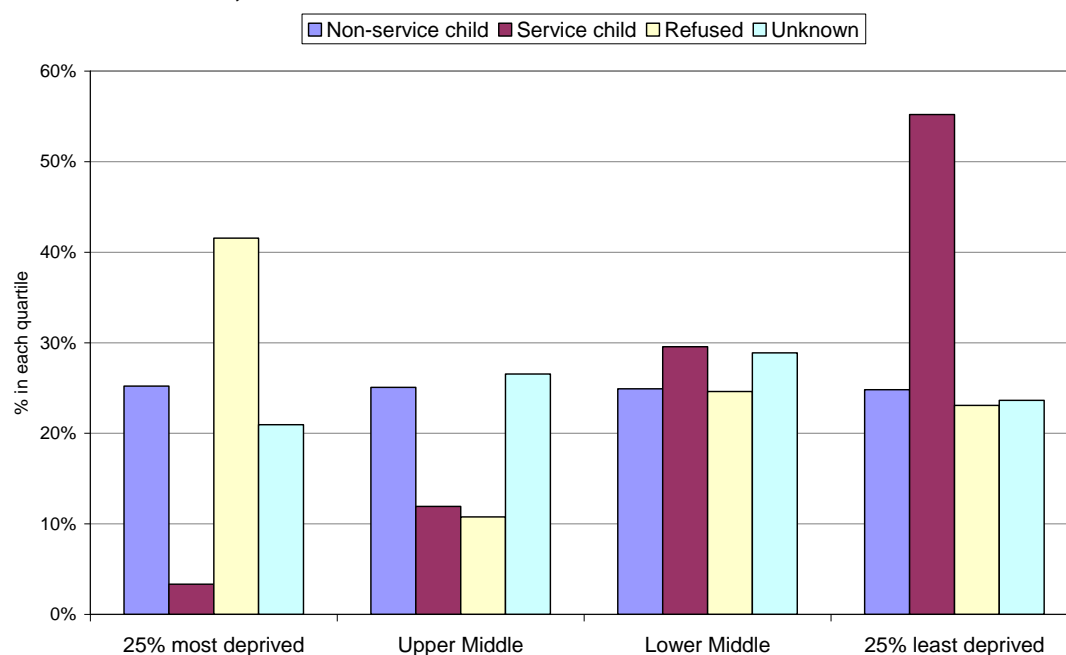


Chart 2.5 Relative Neighbourhood Deprivation at Key Stage 2 by Service Child Identifier, 2009

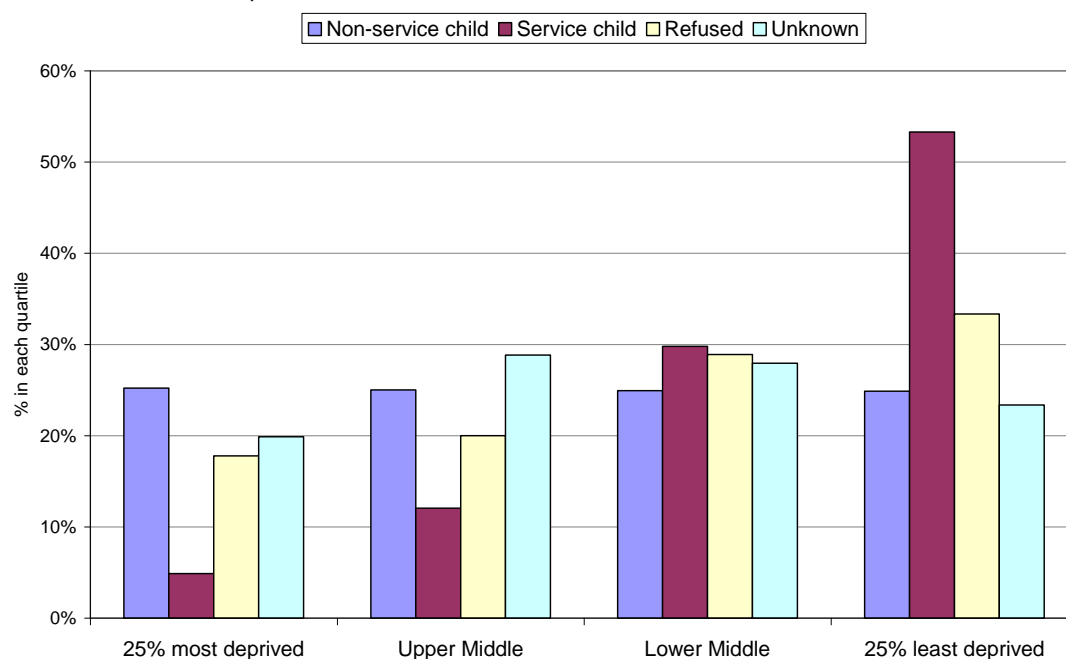
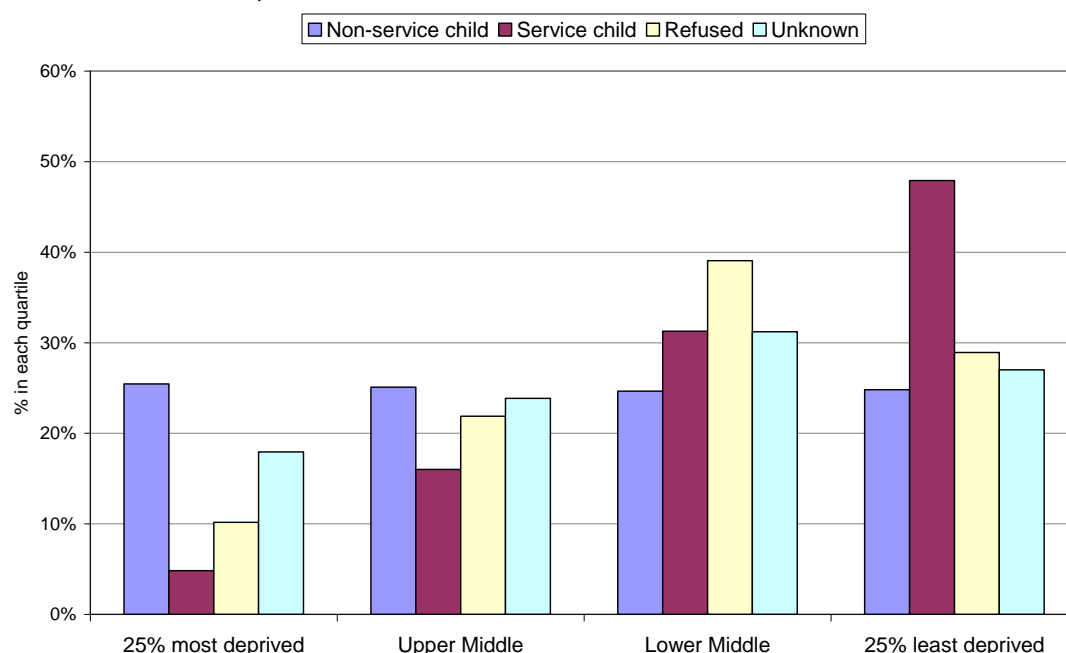


Chart 2.6 Relative Neighbourhood Deprivation at Key Stage 4 by Service Child Identifier, 2009



Charts 2.4 to 2.6 show that service children are less likely to live in the most deprived areas of the country compared with their non service child peers. No more than 5% of service children at the end of any Key Stage live in the most deprived quarter of areas in England. This reflects the same message as the eligibility for FSM analysis showed: that service children are less likely to be deprived than their peers.

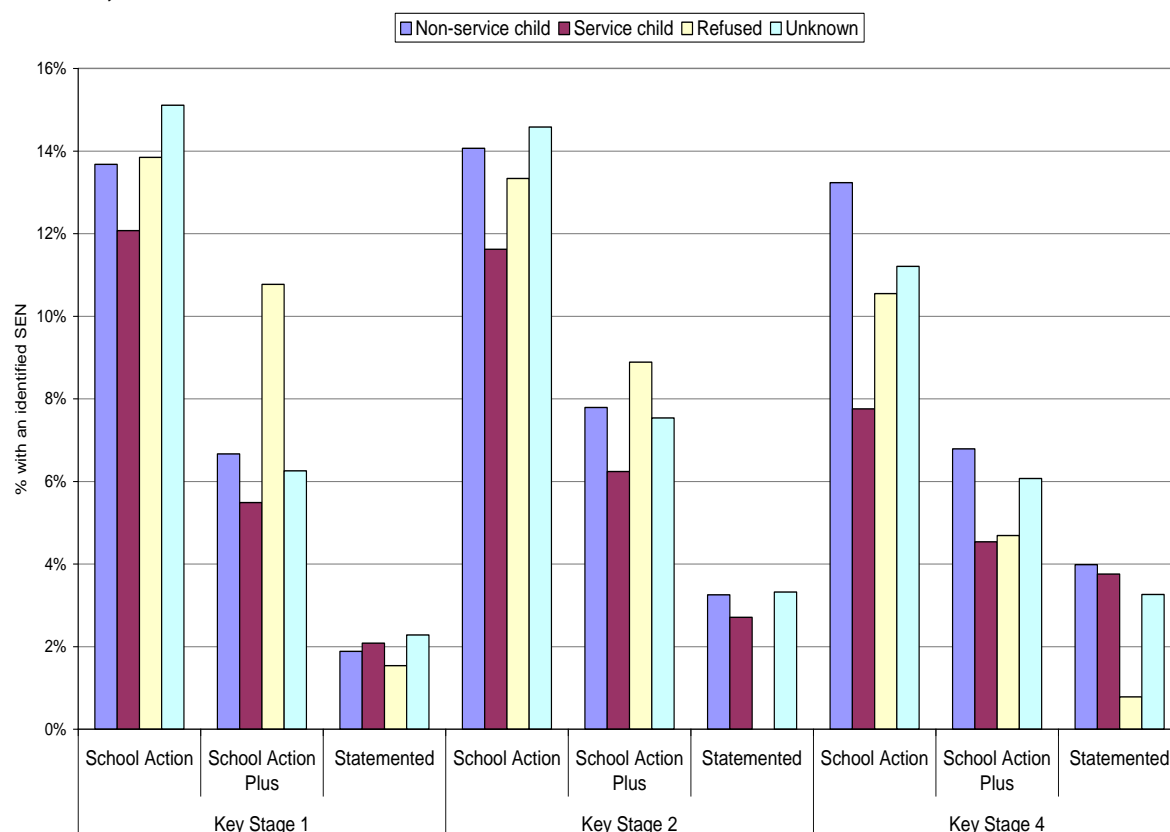
2.2.2 Special Educational Need

There are three categories of special educational need (SEN):

1. School Action: a teacher identifies a child as having a SEN and provides interventions;
2. School Action Plus: as with school action, but with help from external services;
3. Statemented: the Local Authority provides a written statement of the special educational needs of the child.

Chart 2.7 shows that service children are less likely to have an identified special educational need across the end of Key Stages 1, 2 and 4. Considering SEN statements, 2% of service children have a statement at Key Stage 1, 3% at Key Stage 2 and 4% at Key Stage 4. These percentages are similar to their non-service peers at the end of Key Stage 1 and Key Stage 4, albeit slightly lower at the end of Key Stage 2. Considering school action and school action plus, there are considerably fewer cases of identification amongst service children than non-service children across the Key Stages.

Chart 2.7: Special Educational Need at Key Stages 1, 2 and 4 by Service Child Identifier, 2009



2.2.3 Movement Between Schools

If a pupil joins a Primary school between years 3 and 6, they have moved during their Key Stage 2 curriculum. Table 2.3 shows the percentage of pupils who have been mobile in Years 3, 4, 5 or 6 split by service child identifier.

Table 2.3 Percentage of Mobile Pupils in Years 3-6 of Primary School by Service Child Identifier, 2009

		Service child	Non-Service child	Refused	Unknown
Mobile	No	42.1%	61.7%	66.7%	56.8%
	Yes	57.9%	38.3%	33.3%	43.2%

58% of service children were mobile during Key Stage 2 compared with 38% of non service children. However, this movement between schools might be of a different nature if groups of service children move at the same time. This is a very different situation to being a lone pupil moving to a new school.

Movement between Secondary schools has been separated into those pupils that (i) joined a school anytime during Years 10 or 11 or (ii) joined a school at a non-standard time (other than June, July or August) in Years 7, 8 or 9. Table 2.4 shows the percentage of pupils who have been mobile in (i) and (ii)

by service child identifier.

Table 2.4 Percentage of Mobile Pupils in Years 7-11 of Secondary School by Service Child Identifier, 2009

		Service child	Non-service child	Refused	Unknown
	Mobile in Years 10/11	5.6%	2.1%	0.8%	1.3%
	Mobile in non standard time in Years 7, 8 or 9	12.2%	4.9%	4.9%	4.9%

12% of service children were mobile during years 7-9 compared with 5% of non service children and 6% of service children were mobile during years 10-11 compared with 2% of non service children.

3. What Attainment Outcomes do Service Children Achieve?

Summary

- A higher proportion of service children at EYFSP achieve 6 or more in nearly all of the 13 scales, with the exception of emotional development;
 - At Key Stage 1 and Key Stage 2, slightly higher percentages of service children achieve the expected level in English and Maths compared to their peers;
 - A greater percentage of service children achieve the 5+ A*-C and 5+ A*-C including English & Maths thresholds at GCSE compared with their peers;
 - The attainment of service children in LAs with the highest numbers and concentrations of service children varies in comparison with their peers at both Key Stage 2 and 4;
 - After controlling for prior attainment, demographic factors and pupil mobility, service children are still performing better than their peers. However, mobile service children are still disadvantaged and do not perform as well as their non-mobile peers;
 - After only controlling for prior attainment and demographic factors, and not pupil mobility, service children are found to perform similarly to their peers.
-

This chapter begins by focusing on the educational attainment of service children at the Early Years Foundation Stage Profile (EYFSP), Key Stage 1, Key Stage 2 and Key Stage 4. The performance of service children is considered alongside their non-service child peers across these main National Curriculum test ages and performance at Local Authority (LA) level is also addressed. This builds on Chapter 2, which considered the LAs with the highest numbers and/or percentages of service children. Finally, the chapter attempts to control for a range of factors associated with Key Stage 4 attainment in order to 'isolate' the service child effect and to understand why service children outperform relative to their peers.

3.1 Attainment of Service Children

3.1.1 Early Years Foundation Stage Profile

The Early Years Foundation Stage Profile (EYFSP) comprises a set of teacher assessments that take place during reception year, when a child is aged 5.¹⁷ The EYFSP assessment is made across 6 areas, covered by 13

¹⁷ The attainment of pupils who had a valid EYFSP result in 2009 and a valid service child identifier were analysed here; therefore, those in maintained schools at age 5.

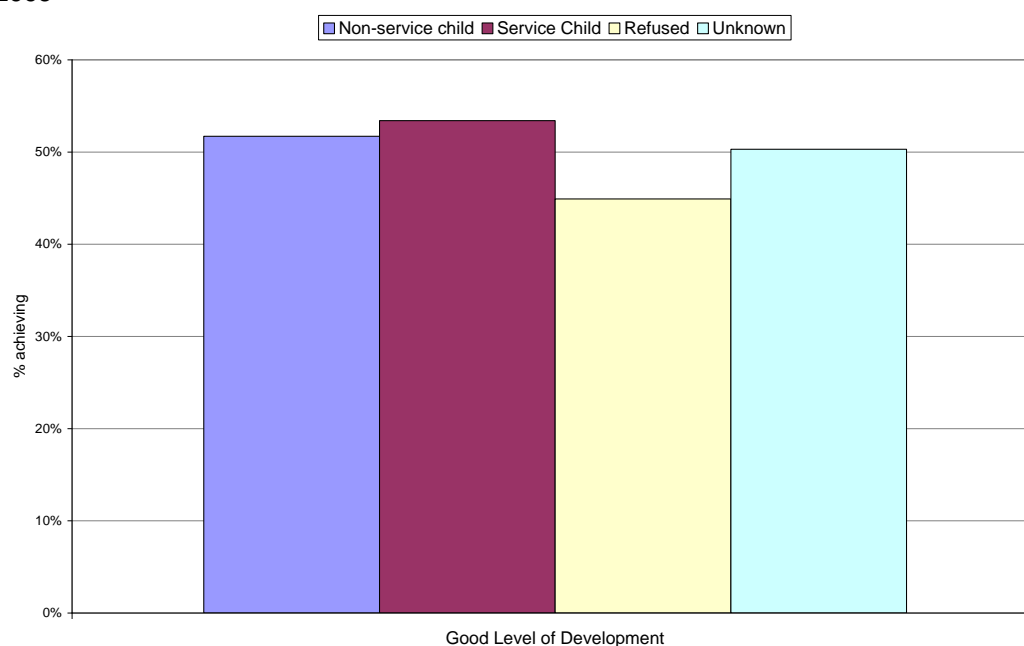
scales:

1. Personal, Social & Emotional Development (PSED) – 3 scales
 - Dispositions and attitudes
 - Social development
 - Emotional development
2. Communication, Language & Literacy (CLL) – 4 scales
 - Language for communication and thinking
 - Linking sounds and letters
 - Reading
 - Writing
3. Problem Solving, Reasoning & Numeracy – 3 scales
 - Numbers as labels for counting
 - Calculating
 - Shape, space and measures
4. Knowledge & Understanding of the world – 1 scale
5. Physical Development – 1 scale
6. Creative Development – 1 scale

A child may score between 0 and 9 points on each assessment scale, where the 9th scale point is only achieved when all other scale points have been achieved.¹⁸ At EYFSP, the percentage of pupils achieving a good level of development is used as a threshold measure. A **good level of development** is achieved when a child scores 78 points or more across the 13 assessment scales AND a score of 6 or more in each of the PSED and CLL scales. Chart 3.1 shows the percentage of pupils achieving a good level of development in 2009.

¹⁸ Early years foundation stage profile – assessment scales reference sheet, QCA, 2008
http://www.qcda.gov.uk/resources/assets/poster_v8_aw.pdf

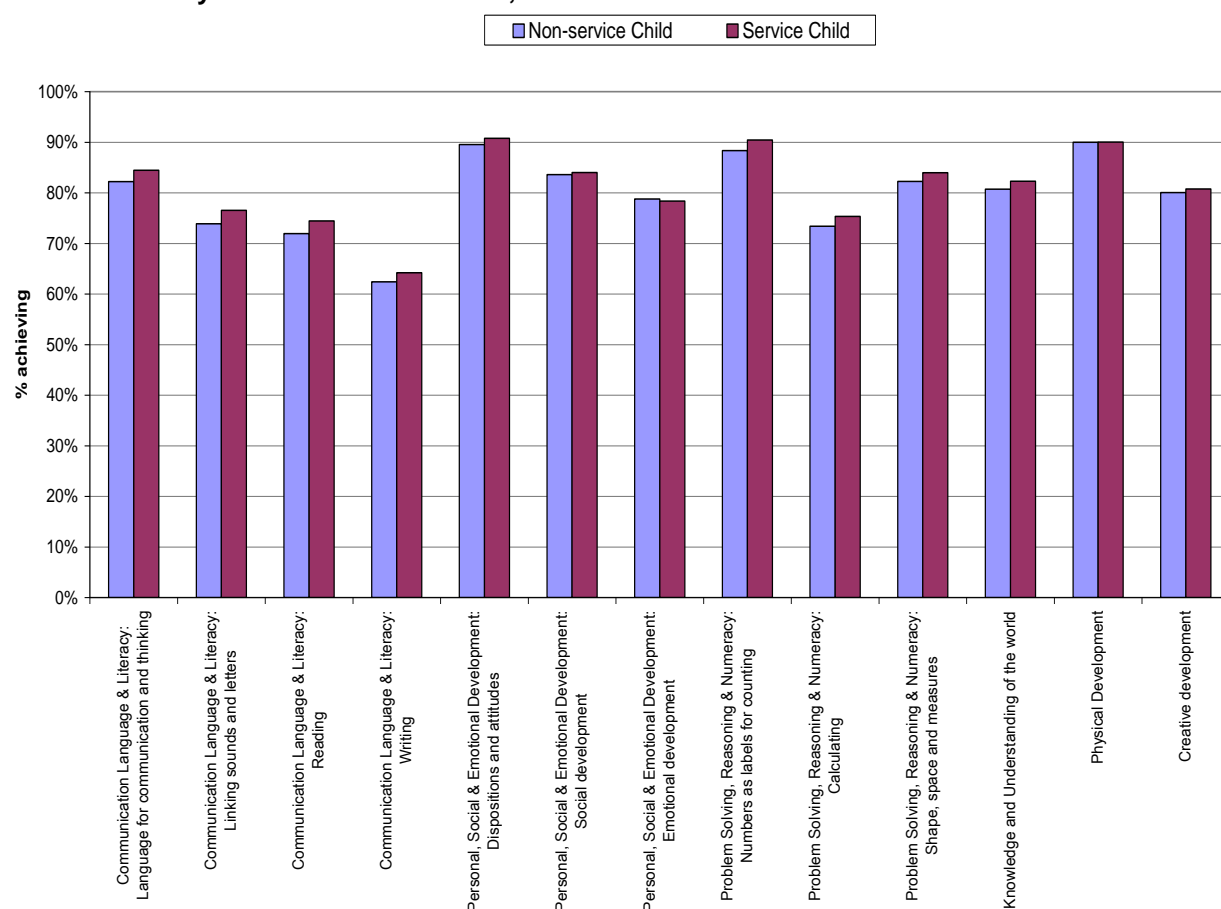
Chart 3.1 Percentage of Service Children Achieving a Good Level of Development at EYFSP, 2009



53.5% of service children achieved this threshold compared with 52% of non-service children. For reference, 45% of the pupils in the refused category and 50% of those in the unknown category achieved this level; of course, some service children's performance may be captured within these groups.

Chart 3.2 breaks the data down into scale level and shows that similar percentages of service children to non-service children achieve at least 6 points in each of the scales. A higher proportion of service children than non-service children achieve 6 or more points in nearly all of the 13 scales, with the exception of emotional development. This supports the findings of the RAND research (2009), as addressed in section 1.2, where children from military families reported higher levels of emotional difficulties than children in the general population.

Chart 3.2 Percentage of Service Children Achieving 6 or more points across the 13 EYFSP scales by Service Child Identifier, 2009



On average, there is a 1.4 percentage point difference between the percentage of service children and non service children meeting the 6-point threshold across the 13 scales. The largest difference is 2.7 percentage points in the Communications, Language & Literacy: Linking Sounds and Letters scale. In summary, the EYFSP data shows that service children tend to perform slightly better than their peers in achieving a good level of development and across the 13 individual scales.

3.1.2 Key Stage 1 Attainment

This section considers performance at the end of Key Stage 1, where mathematics, reading and writing are teacher assessed at age 7. Chart 3.3 shows the percentage of pupils achieving each level in mathematics at Key Stage 1 and Chart 3.4 shows the equivalent for English: an average of the reading and writing assessments. Here, for example, if the combined average indicates that the pupil achieved a level 2A in reading and a level 3 in writing, the lower level is achieved overall.

Chart 3.3 Percentage of pupils achieving each Key Stage 1 Mathematics level by Service Child identifier, 2009

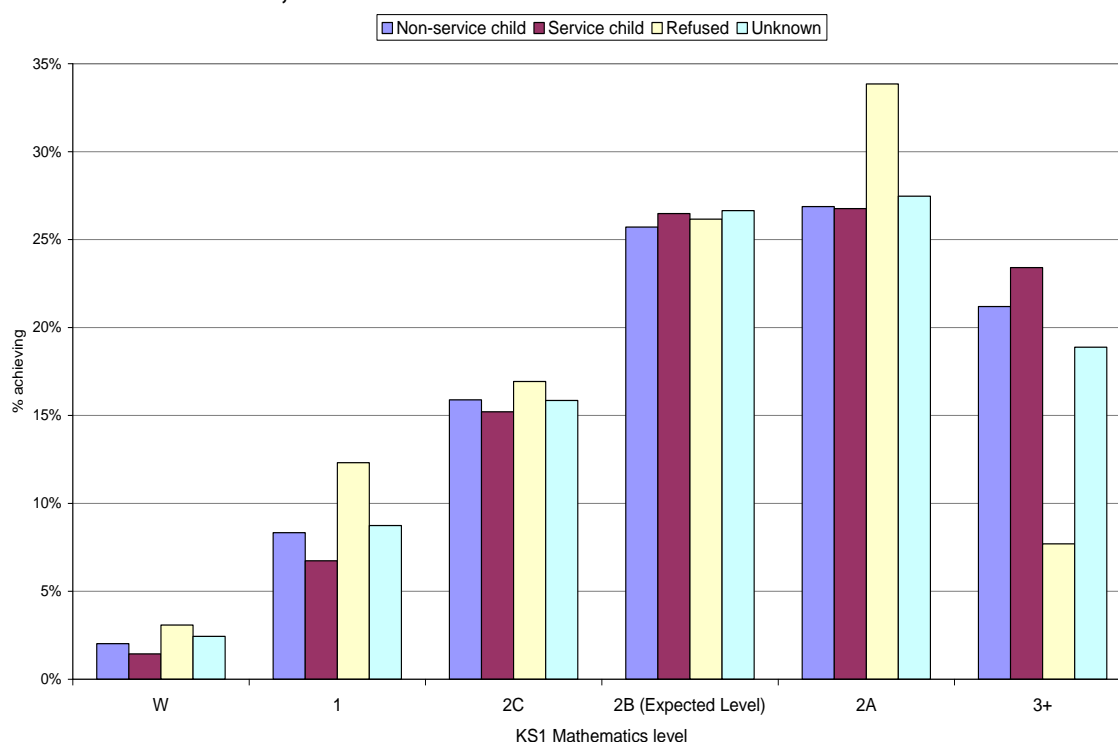
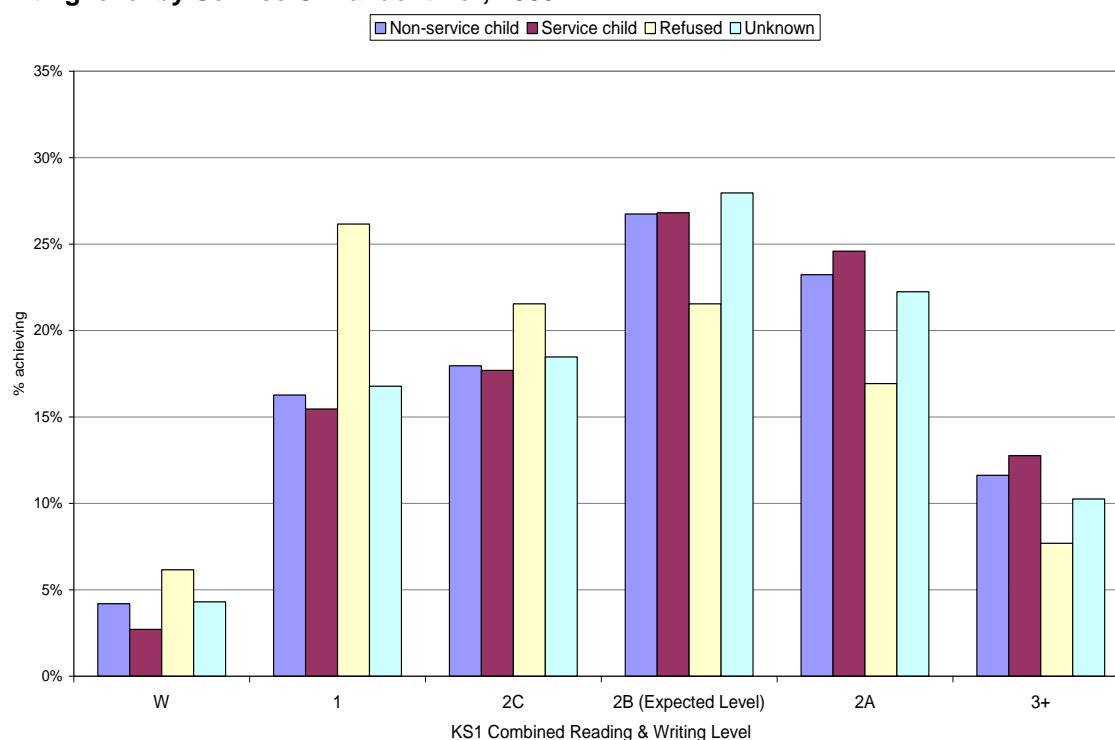


Chart 3.4 Percentage of pupils achieving each Key Stage 1 combined Reading and Writing level by Service Child identifier, 2009



At the end of Key Stage 1, 77% of service children achieved a level 2B (the expected level) or above in mathematics. This compared with 74% of non-service children. Similar proportions of service children and non-service children achieve a level 2A or 2B, however, a higher proportion of service

children achieve a level 3: 23% compared to 21% respectively.

For English, 64% of service children achieved a Level 2B (the expected level) or above, compared with 62% of non service children. Again, the highest level is achieved by a greater percentage of service children than non-service children, as well as Level 2A. Also, in both maths and English, fewer service children than their peers are teacher assessed to be working below the level of the test.

3.1.3 Key Stage 2 Attainment

At the end of Key Stage 2 (age 11), National Curriculum tests were administered and teacher assessments were also submitted into the Department for Education. This section considers the attainment of service children in the National Curriculum tests. Chart 3.5 shows the percentage of pupils achieving each level in mathematics at Key Stage 2 and Chart 3.6 shows the equivalent for English.

Chart 3.5 Percentage of pupils achieving each Key Stage 2 Mathematics level by Service Child identifier, 2009

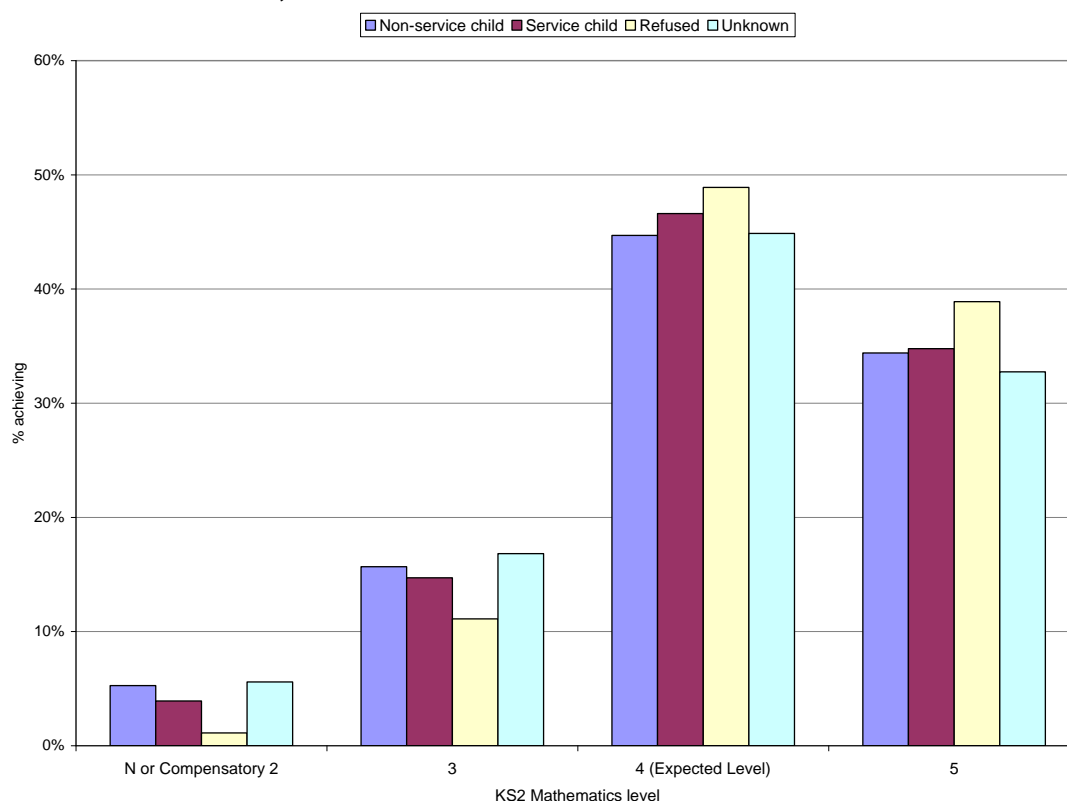
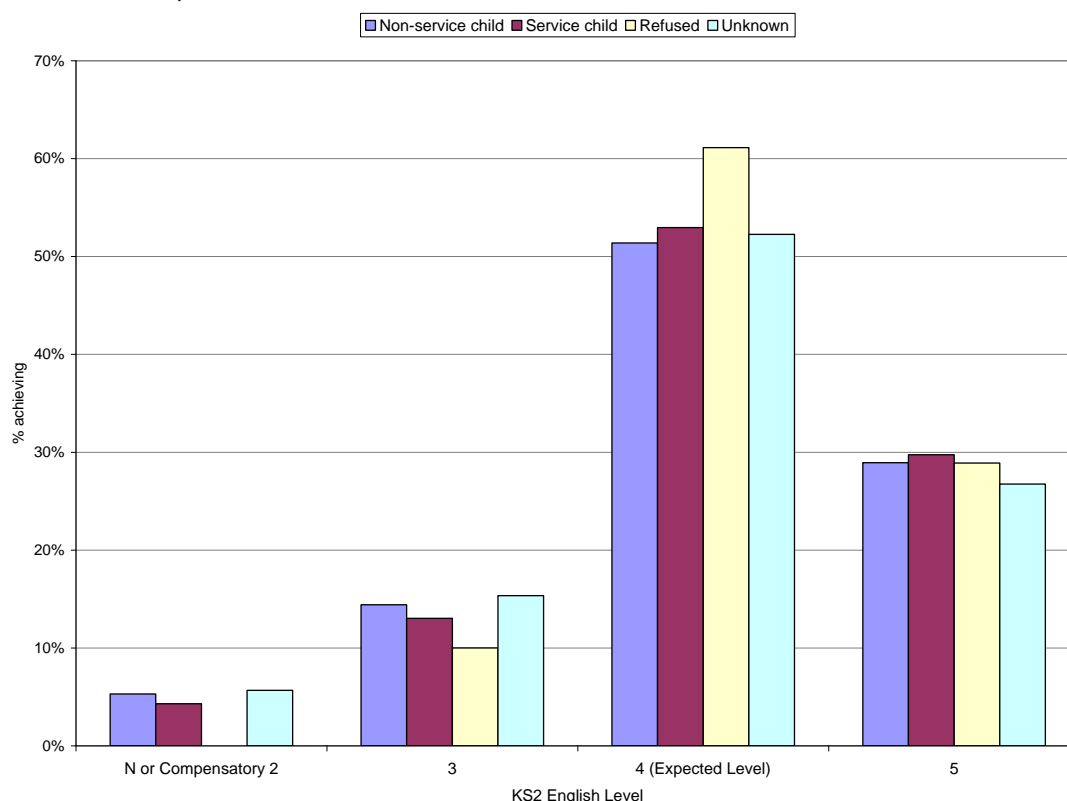


Chart 3.6 Percentage of pupils achieving each Key Stage 2 English level by Service Child identifier, 2009



Service children perform slightly better than non-service children in Key Stage 2 Mathematics. 81% of service children achieved a level 4 (the expected level) or above compared to 79% of non service children.

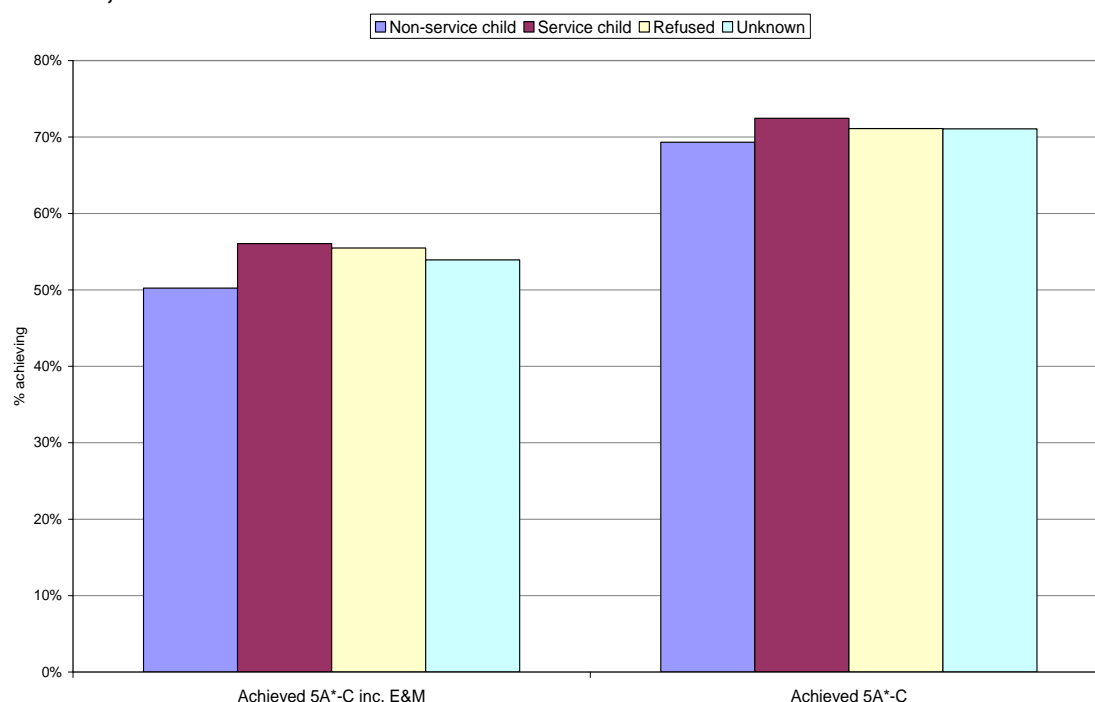
A similar pattern is seen for Key Stage 2 English, where 83% of service children achieved the expected level or above compared with 80% of non-service children.

3.1.4 Key Stage 4 Attainment

Attainment at Key Stage 4 was measured using two thresholds: (i) the percentage achieving 5 or more A*-C grade GCSE/ equivalents including English & Mathematics and (ii) the percentage achieving 5 or more A*-C grade GCSE/ equivalents. As a further step the capped and uncapped point scores¹⁹ of pupils were considered. Charts 3.7 and 3.8 show the results split by service children identifier.

¹⁹ Uncapped points score = the total number of points per pupil. Capped points score = the pupil's best 8 results. Point score per GCSE: A* = 58, A = 52, B = 46, C = 40, D = 34, E = 28, F = 22, G = 16.

Chart 3.7 Percentage of pupils achieving GCSE thresholds by Service Child Identifier, 2009

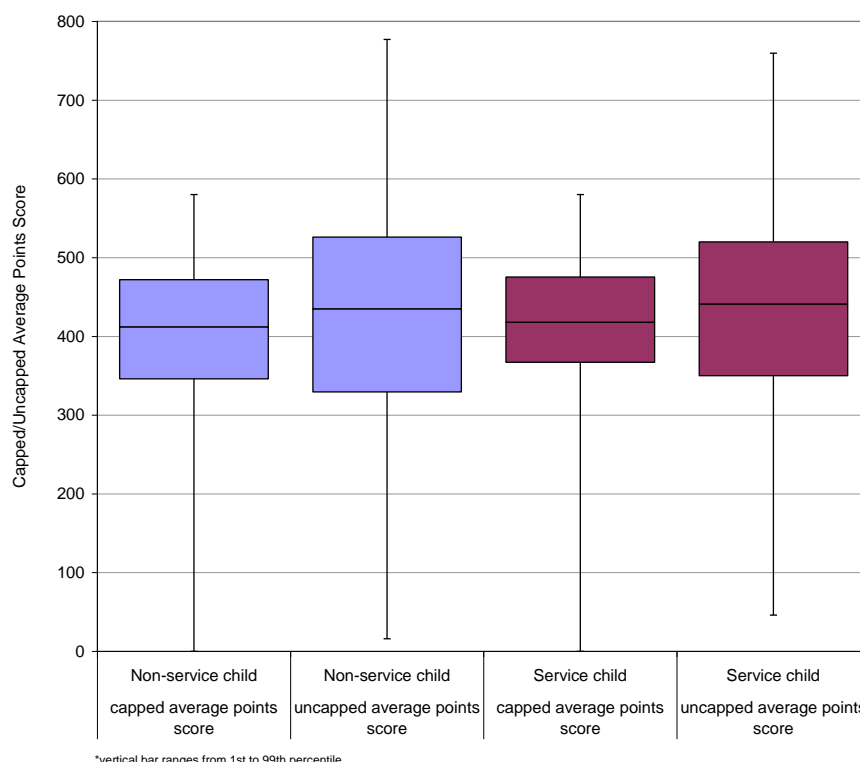


A greater percentage of service children achieved both thresholds: 56% of service children achieved 5 or more A*-C grades including English and Mathematics; compared with 50% of non service children, and 72% of service children achieved 5 or more A*-C grades, compared with 69% of non-service children. The 'Refused' and 'Unknown' groups also performed better than the non-service child group and so, even if some service children fall into these groups, there is evidence that service children were more likely to outperform their non-service peers at Key Stage 4.

Chart 3.8 uses 'boxplots'²⁰ to provide the range of capped and uncapped point scores achieved at the end of Key Stage 4 by service children identifier.

²⁰ An explanation of a boxplot can be found in Annex D.

Chart 3.8 Boxplots of Capped and Uncapped Average Points Scores by Service Child Identifier, 2009



The chart shows that the 25th percentile (i.e. where the 25th percentage of scores fall) is slightly higher for service children than for non service children for both capped and uncapped points scores. Other than this, the distributions of the point scores for service children and non service children are very similar, with similar ranges and similar average point scores. This shows that although relatively high performing service children are achieving on a par with their peers, the lower performing (bottom 25%) of the service children group are performing better than the lowest performing 25% of their peers, on average.

3.2 Local Authority Attainment Analyses

This section compares the attainment of non-service children with service children in the LAs with the highest numbers and percentages of service children, as discussed in chapter 2. For this, the 10 local authorities with the highest percentages and/or highest numbers of service children **in Year 6** and **Year 11** were identified. As a reminder, 6 Local Authorities featured in both top 10 lists and a final list of 13 LAs was populated for both Key Stage 2 and Key Stage 4.

3.2.1 Key Stage 2 Attainment

Chart 3.9 considers the percentage of pupils achieving the expected level in mathematics at Key Stage 2 by LA and Chart 3.10 replicates this analysis for the expected level in English. The dark blue line on each chart plots the national average.

Chart 3.9: Percentage of pupils achieving Level 4+ in Key Stage 2 Maths by LA, 2009

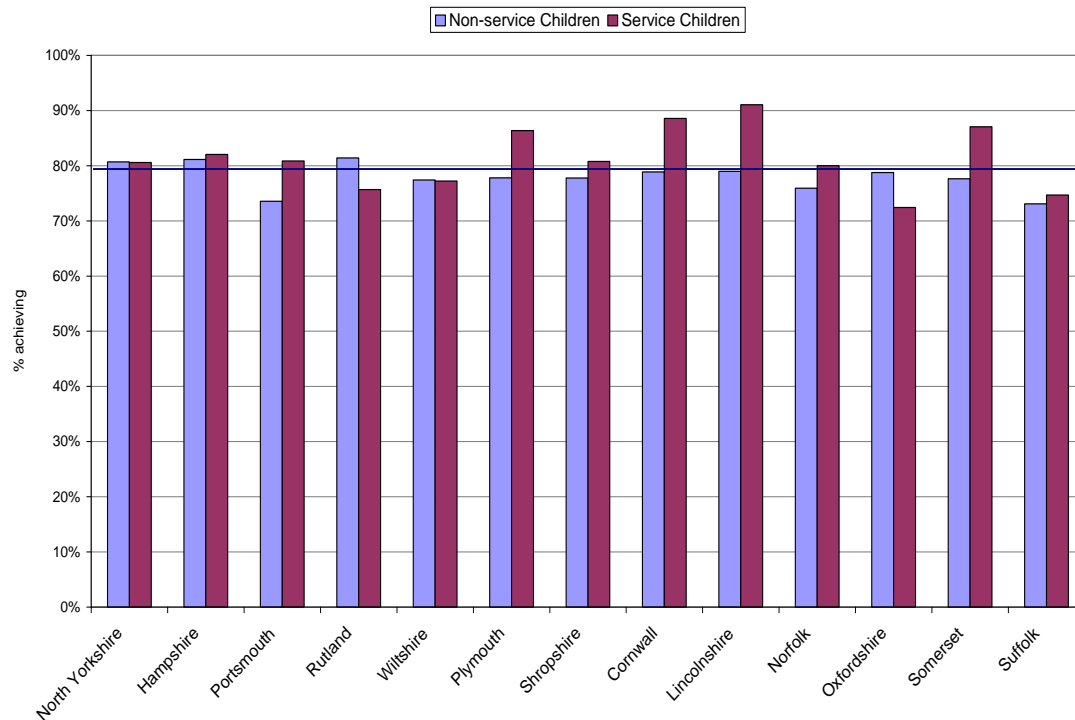
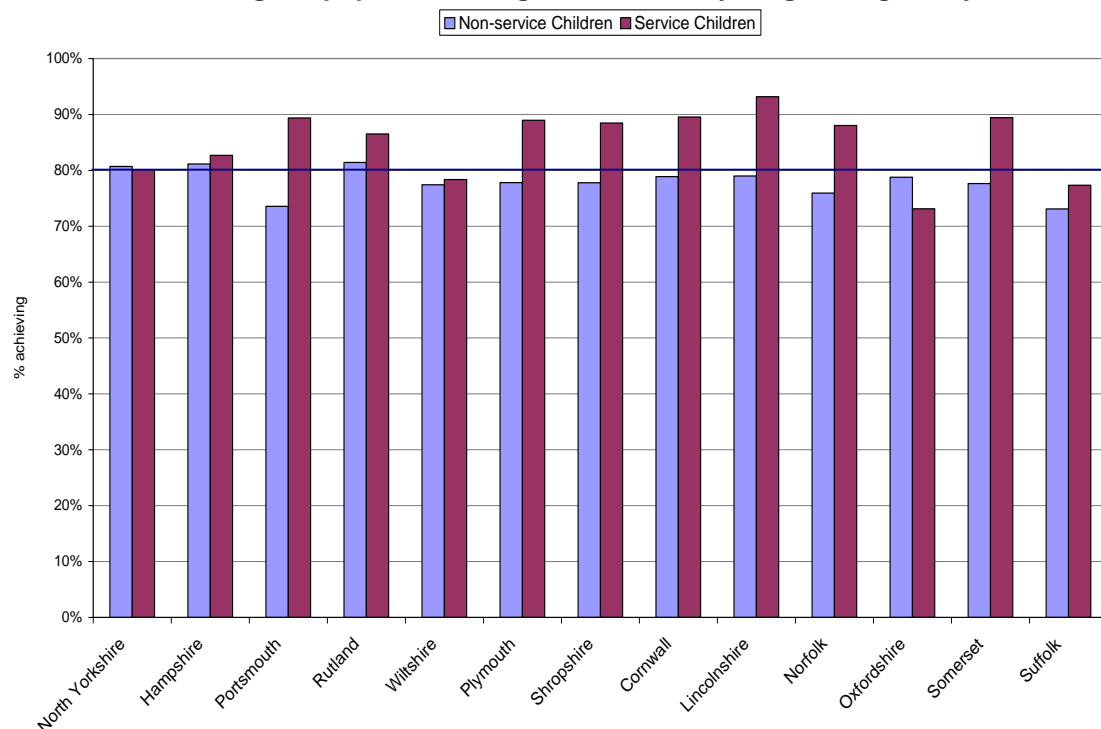


Chart 3.10: Percentage of pupils achieving Level 4+ in Key Stage 2 English by LA, 2009



Higher proportions of service children achieve the expected level or above in Key Stage 2 Mathematics across the majority of these local authorities. However, in Rutland and Oxfordshire, service children perform less well than their peers, although chapter 2 showed that there were only 37 service children in Rutland at the end of Key Stage 2 in 2009. A test of significance²¹ was conducted to assess whether the differences seen between service children and non service children were actually statistically significant, or whether they were likely to be due to chance i.e. low numbers. The following LAs were found to be doing statistically better with their service children than non-service children in KS2 Mathematics in 2009: Plymouth, Cornwall, Lincolnshire and Somerset. No LAs were found to have service children who had done statistically worse than their non-service children.

Similarly, in the majority of these local authorities, a higher proportion of service children achieved the expected level or above in Key Stage 2 English. Service children again performed less well than their peers in Oxfordshire; only 72% of service children reach this threshold compared to 78% of non-service children. Service children also performed less well than their peers in Wiltshire and North Yorkshire. In the following LAs, service children were found to be doing statistically better than their peers in KS2 English in 2009: Portsmouth, Plymouth, Cornwall, Lincolnshire, Norfolk and Somerset. Oxfordshire was the only LA where their service children were achieving significantly less than their peers.

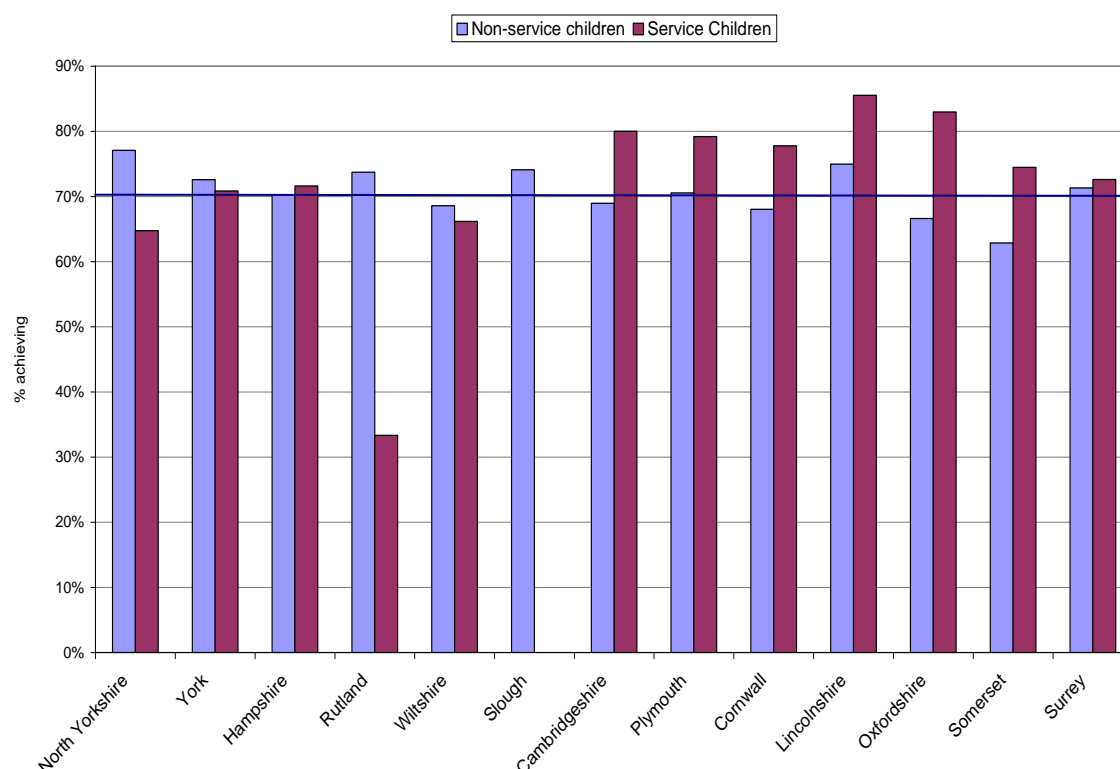
3.2.2 Key Stage 4 Attainment

A similar analysis was repeated for the expected thresholds at Key Stage 4. Chart 3.11 below shows that none of the 26 service children at the end of Key Stage 4 in Slough achieved 5 or more A*-C GCSEs. This is not so surprising when it is known that all 26 service children actually attended a community special school in this Local Authority and there is no military facility in Slough itself. Also, there were only 6 service children at the end of Key Stage 4 in Rutland and 23 in York and so these results should be treated with caution.

Aside from Slough's results, lower proportions of service children in North Yorkshire, Wiltshire, Rutland and York achieved the threshold compared with their peers, otherwise service children generally outperformed their peers. The following LAs were found to be doing statistically significantly better with their service children than non-service children in the attainment of the 5+ A*-C threshold: Plymouth, Cornwall, Lincolnshire, and Oxfordshire. In Rutland and North Yorkshire, however, service children were found to be achieving significantly less than their peers.

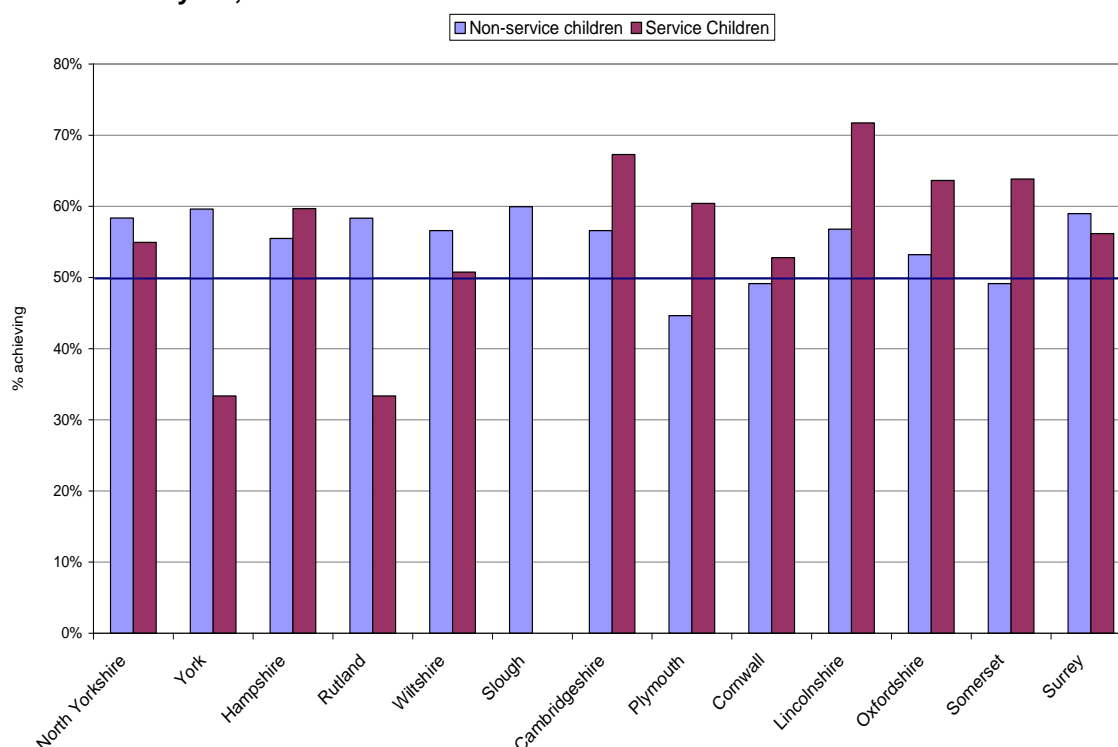
²¹ At the 5% significance level

Chart 3.11 Percentage of Pupils achieving 5+ A*-C GCSEs at Key Stage 4 by LA, 2009



Given the results and explanation above, it is intuitive that Chart 3.12 shows that no service children in Slough achieved 5A*-C including English & Mathematics. Service children also did less well on this measure than their peers in North Yorkshire, York, Rutland and Wiltshire. Of these LAs, York and Rutland have small numbers of service children. The following LAs were found to be doing statistically significantly better with their service children than non-service children in the attainment of 5 A*-C including English and Maths threshold: Plymouth, Lincolnshire, and Oxfordshire. In, York and Wiltshire, however, service children were found to be achieving significantly less than their peers

Chart 3.12 Percentage of Pupils achieving 5+ A*-C GCSEs including English & Mathematics by LA, 2009



3.3 Understanding Why Service Children Outperform Relative to their Peers

This chapter has shown that service children perform at least the same as, if not better than their peers across the Key Stages; although we noted this is not necessarily the case across the country. Chapter 1 examined some of the research and identified many of the challenges faced by the children of armed forces personnel. The fact that service children outperform their peers may therefore be surprising to some. However, in chapter 2 we noted that service children are on average less economically deprived than their peers and less likely to have an identified special educational need. Economic deprivation and having a SEN are both associated with lower attainment so we may expect service children to perform relatively well on average. On the other hand, service children were more likely to be mobile and mobile children tend to do less well at school.

In this section, we attempt to control for a range of factors associated with KS4 attainment in order to 'isolate' the service child effect. The methodology used is called multilevel modelling. This is a type of regression analysis that controls for the fact that pupils are clustered within schools. Pupils within schools tend to have more in common with each other than with pupils in other schools. Multilevel modelling is a way of controlling for these school effects. Multilevel models are used by the DfE to calculate Contextual Value Added (CVA); more information about CVA can be found in the Annex B. The analysis considers the difference in GCSE average point score obtained by service children and non-service children. For consistency with the

Department's CVA model, a version of the capped points score that includes a bonus for English and maths is used: best 8 GCSE/ equivalents including an additional English and maths bonus.

The model is built up in several steps:

Step 1: **School effects**

In the first step of the model, the only variable entered is whether or not the pupil is a service child. School is controlled for in the model specification.

Step 2: **Prior attainment**

The CVA model shows that prior attainment at KS2 explains more than half of the variation in outcomes at KS4. Stage 2 looks at the difference in GCSE attainment between service children and non-service children after controlling for KS2 prior attainment.

Step 3: **Prior attainment plus demographic variables**

These include pupil level characteristics used in the CVA model that are associated with attainment such as age in year, gender, free school meal status and SEN status.

Step 4: **Prior attainment plus demographic variables plus mobility**

We know from the CVA model and from the national and international research, that moving schools during critical times of one's schooling can be detrimental. We also know that service children are more likely to move schools than non-service children.

Table 3.1 shows the change in the service children coefficient at the different stages of the model. Every 6 points equals 1 grade higher in one subject at GCSE. The full table of coefficients from the models is shown in the appendix for chapter 3.

Table 3.1 Changes to the service child coefficient at different levels of the model

	Step 1	Step 2	Step 3	Step 4
Service child coefficient	11.4***	6.0***	2.3	7.0***
(standard error)	-2.5	-1.8	-1.7	-1.7
Controls				
- Prior attainment		✓	✓	✓
- Demographic factors			✓	✓
- Mobility				✓

Note: ***, ** & * indicate significance at the 99%, 95% and 90% levels respectively

At step 1, the service child coefficient is 11.4. This means that, on average, service children achieve almost 2 grades higher in one subject at GCSE than their peers, when school effects are controlled for.

At step 2, prior attainment is controlled for, which results in a coefficient of 6. This shows that a lot of variation can be explained through prior attainment.

However, even after controlling for prior attainment, service children are still performing better than their peers; on average service children are achieving 1 grade higher in 1 subject at GCSE.

Chapter 3 showed that service children are less likely to be deprived than their non-service child peers, so at stage 3 these demographic factors are controlled for. These factors are less likely to affect service children and Table 3.1 shows that after controlling for them, the service child coefficient drops to 2.3 and that this is no longer significant. Now service children are performing no differently compared with their peers after controlling for demographic factors and prior attainment

The final step adds pupil mobility to the controls. The service child coefficient is now 7; resulting in service children achieving roughly 1 grade higher in 1 subject at GCSE. Mobile service children do better than their mobile non service child peers, showing that they cope with mobility better. However, they are still disadvantaged, as they do not perform as well as non mobile peers.

In summary, although service children outperform their peers at GCSE, around half the difference is explained by prior attainment. Once we've controlled for other demographic factors related to academic attainment, we find that service children perform no differently from their peers. However, when we add mobility to the controls, we find that service children outperform their peers again. Moving schools in years 10 or 11 is associated with a massive fall in GCSE performance of about 80 points (see full model in the Annex). 80 points is the equivalent to dropping 2 grades in between 6 and 7 subjects. The model suggests that service children still suffer academically if they move schools during their GCSE years, but that the impact of mobility on service children is not as great as the impact on non-service children. The impact of mobility on the attainment of service children is discussed in more detail in the next chapter.

4. How Does Mobility Affect Service Children's Attainment?

Summary

- Moving schools frequently can severely disrupt a service child's education;
 - In 2009, service children who moved school performed better, on average, than their non-service peers who moved school during Key Stage 2 and Key Stage 4. 32% of mobile service children during Key Stage 4 achieved the 5+ A*-C GCSE grades including English and maths threshold compared with 21% of their mobile peers;
 - However, they attained less well than non-mobile service children at the end of both examined Key Stages. 59% of non-mobile service children achieved the expected threshold at the end of Key Stage 4, for example.
-

This chapter considers research on pupil mobility (movement between schools) for service children and how this creates a key challenge for the majority of service children who frequently have to re-locate. The chapter then turns to consider whether the movement of service children between schools has an effect on their attainment and whether this is different to the general effect of mobility on pupils' attainment. This builds on the discussion of movement between schools in section 2.2.3.

4.1 Research on Service Children and Pupil Mobility

The impact of high mobility on pupil attainment is now becoming more widely researched. Some of the impacts for highly mobile pupils identified by US research include isolation after a move, which can, in turn, impact upon attendance and performance (ERIC, 2003).²² Some evidence suggests that the academic consequences of high mobility are 'severe' (ERIC, 2003). It may take four to six months for mobile pupils to recover academically from a transfer, and they are '*half as likely to graduate from high school as their non-mobile peers*' (ERIC, 2003).

Ofsted (2002) concluded that the relationship between pupil mobility and attainment is complex.²³ The evidence explained how it is difficult to isolate the effects of pupil mobility as it often occurs alongside other factors, such as a disrupted family life. The most common complaints made by pupils (Ofsted, 2002), were that they had done the work before or that they did not know what was going on in particular subjects.

²² Taken from *Providing Highly Mobile Students with an Effective Education*

²³ In *Managing pupil mobility: Reference number HMI 403*

<http://www.ofsted.gov.uk/Ofsted-home/Publications-and-research/Browse-all-by/Education/Leadership/Governance/Managing-pupil-mobility>

Having to move school frequently can severely disrupt service children's education. This is not only in terms of learning and progression being disrupted, but also in terms of social and emotional progress. For example, pupils may have to join classes that have already begun, they may have to make new friends and certain activities that pupils previously enjoyed may no longer be available to them.

It is not only schools specifically for service children that should be taken into consideration. For example, Dobson et al. (2000) featured *Services Junior School* in their case studies.²⁴ This is a maintained school, but is situated close to an army garrison. About 90% of pupils come from families living in forces' married quarters, and 90% of fathers are in army employment. Dobson et al (2000) found that schools with large numbers of service pupils put a huge amount of effort into passing on information to assist in the '*continuity of learning*'. The authors went on to recommend that more attention should be given to reducing some of the difficulties that schools experience in planning for new arrivals.

According to the 2008 Army Families Survey, 37% of officers' and 25% of soldiers' families had problems getting a place at their preferred school (cited in Davis, 2010). With just 12 weeks' notice before deployment, it can be extremely difficult for families to prepare.

These research findings show that the effects of pupil mobility can vary. The next section considers Key Stage 2 and Key Stage 4 results to determine the extent to which service children are disadvantaged in comparison with their non-mobile peers.

4.2 Attainment of Mobile Service Children at Key Stage 2

Section 2.2.3 considered movement between schools and showed that 58% (1,400) service children changed school during Key Stage 2 compared with 38% of their peers. Chart 4.1 shows the percentage of pupils achieving Level 4+ (the expected level) in Key Stage 2 Mathematics and Chart 4.2 shows the percentage achieving this threshold in Key Stage 2 English, split by service child identifier.

²⁴ From *Pupil Mobility in Schools* (1999)

Chart 4.1 Percentage of Mobile & Non-Mobile Pupils achieving Level 4+ in Key Stage 2 Mathematics by Service Child Identifier, 2009

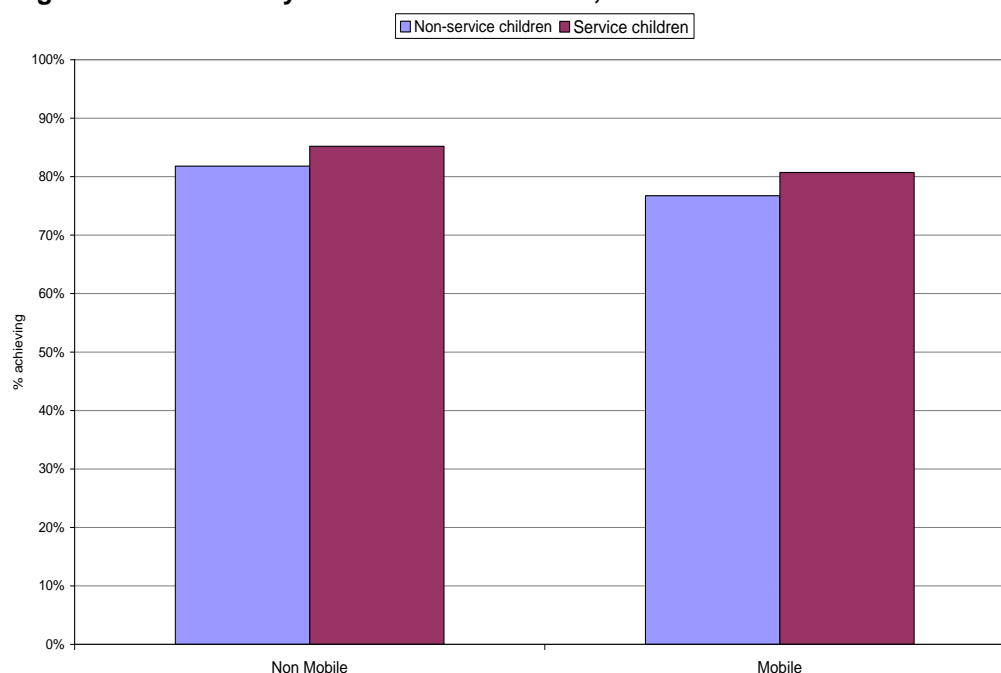
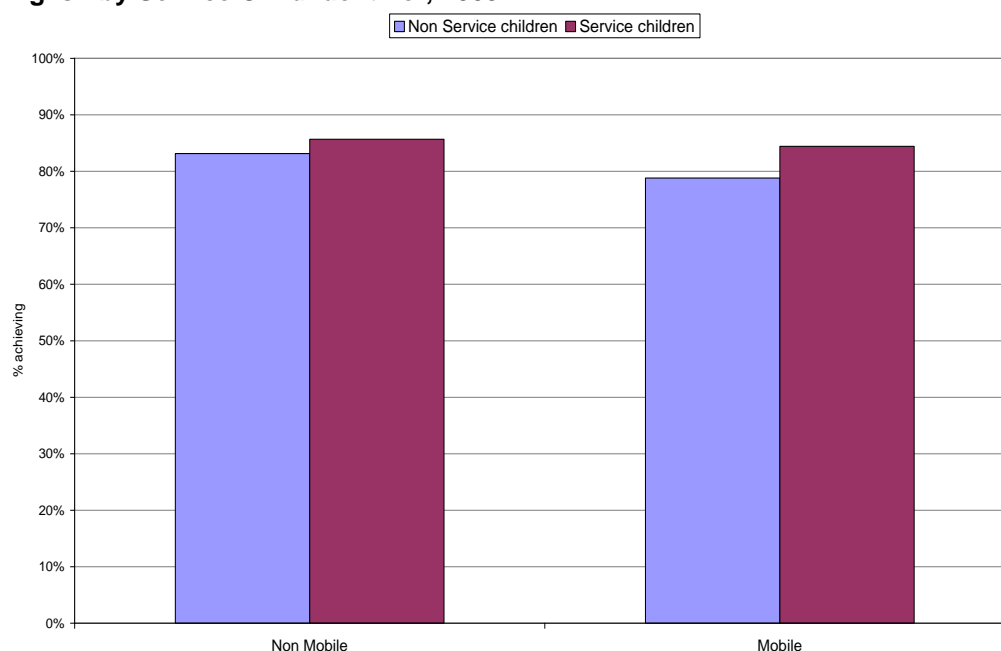


Chart 4.2 Percentage of Mobile & Non Mobile Pupils achieving Level 4+ in English by Service Child Identifier, 2009



81% of mobile service children attained the expected level or above in mathematics compared with 77% of mobile non-service children. For comparison, 85% of non-mobile service children achieved this threshold (and 82% of non-mobile non-service children did).

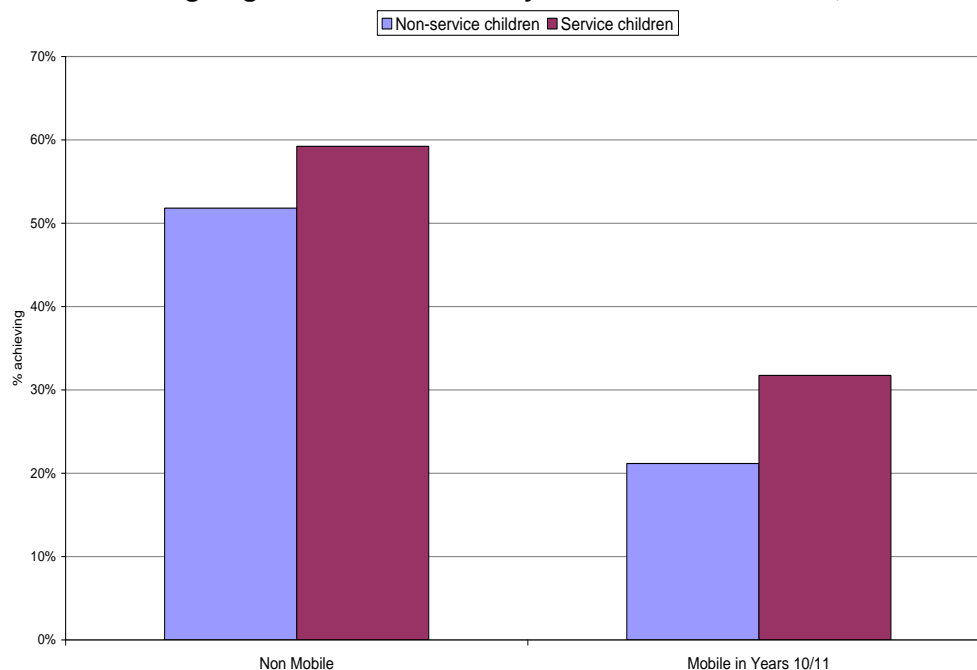
For English, the patterns are similar: 84% of mobile service children achieved the expected level or above compared with 79% of their mobile peers. For comparison, 86% of non-mobile service children achieved this threshold (and 83% of non-mobile non-service children did).

The main message is that although mobile service children are performing better than their mobile non-service peers, they are attaining less well than non-mobile service children at Key Stage 2.

4.3 Attainment of Mobile Service Children at Key Stage 4

Section 2.2.3 considered movement between schools and showed that 6% (100) service children changed school during their GCSE years compared with 2% of their peers. Chart 4.3 below shows the percentage of mobile and non-mobile pupils in **Years 10 or 11** achieving 5+ A*-C grades including English and mathematics at GCSE, split by service children identifier. 32% of mobile service children achieved this threshold compared with 21% of mobile non-service children. For comparison, 59% of non-mobile service children reached this threshold compared with 52% of non-mobile non-service children. The national average for this threshold is 50%.

Chart 4.3 Percentage of Mobile & Non-Mobile Pupils in Years 10/11 achieving 5 A*-C including English & Mathematics by Service Child Identifier, 2009

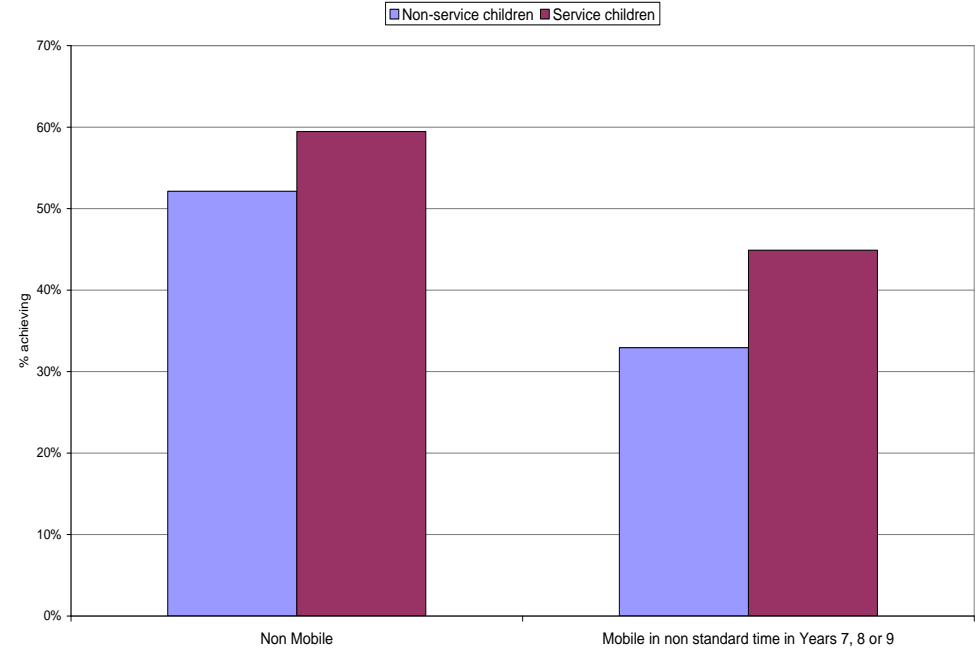


Section 2.2.3 also considered movement between schools at a **non-standard time in Years 7, 8 or 9** and showed that 12% (225) service children changed school during their these years compared with 5% of their peers. Chart 4.4 considers the attainment of pupils who changed schools during this time. 45% of service children who were mobile achieved this threshold compared with 33% of their mobile peers.

Similarly to results seen at Key Stage 2, mobile service children at Key Stage 4 perform better, on average, than their mobile peers. However, they are still

disadvantaged as they do not perform as well as non-mobile service children.

Chart 4.4 Percentage of Mobile & Non Mobile Pupils at a non-standard time in Years 7, 8 or 9 achieving 5 A*-C including English & Mathematics by Service Child Identifier, 2009



These charts illustrate the attainment of mobile and non-mobile service children compared with their peers. Average contextualised value-added (CVA) scores, that take account of pupil prior attainment and a variety of other contextual factors that are known to impact on pupil progress, may be found in Annex B. This contains average CVA scores for mobile and non-mobile service children split by service child identifier at the end of Key Stages 2 and 4. Levels of progress split by service child identifier may also be found in Annex C.

5. What Effect do Service Children have on their Peers?

Summary

- Service children were present in 938 maintained primary schools in England at the end of Key Stage 2 in 2009 (6% of all maintained primary schools);
 - At the end of Key Stage 4 in 2009, service children were present in 423 maintained secondary schools (11% of all maintained);
 - The presence and proportion of service children at the end of Key Stage 4 showed little impact on the average attainment and progress of their non-service peers;
 - In schools with service children, service children were seen to have slightly higher average capped point scores than non-service children. Service children were also generally seen to make more progress than non-service children once prior attainment and characteristics were taken into account.
-

Chapter 3 provided the educational attainment of children of service personnel in 2009 and this chapter now turns to explore the effect the distribution of service children across schools has on their non-service peers. In particular, the effects of varying concentrations of service children on average attainment and progress, using contextualised value-added, are explored for pupils at the end of Key Stage 4 (equivalent analyses for pupils at the end of Key Stage 2 may be found in the appendices for Chapter 5).

5.1 Distribution of Service Children in Schools

Chapter 1 provided the numbers of service children in England and their distribution across Local Authorities. This section considers the percentage of service children in schools at the end of Key Stages 2 and 4. Table 5.1 and Table 5.2 below show the number of Primary and Secondary schools with no service children, 0-5% service children in their cohort, 5-10% service children and greater than 10% service children in their cohorts.

Table 5.1: Number of schools with varying concentrations of service children at the end of KS2, 2009

% Service Children at the end of KS2	Number of Schools
No service children	14,449
0-5% service children	513
5-10% service children	195
10%+ service children	230

Table 5.2: Number of schools with varying concentrations of service children at the end of KS4, 2009

% Service Children at the end of KS4	Number of Schools
No service children	3,477
0-5% service children	351
5-10% service children	49
10%+ service children	23

6% of Primary schools had at least one service child in their end of Key Stage 2 cohort. Of these schools, 230 schools (1%) had greater than 10% service children in this cohort. For Secondary schools, 11% had at least one service child in their end of Key Stage 4 cohort and 23 (1%) had more than 10%.

5.2 Attainment of Non-Service Children at Key Stage 4 by Proportion of Service Children

This section uses ‘boxplots’²⁵ to display the distribution of average capped point scores and average CVA scores for service and non-service children in schools with varying percentages of service children.

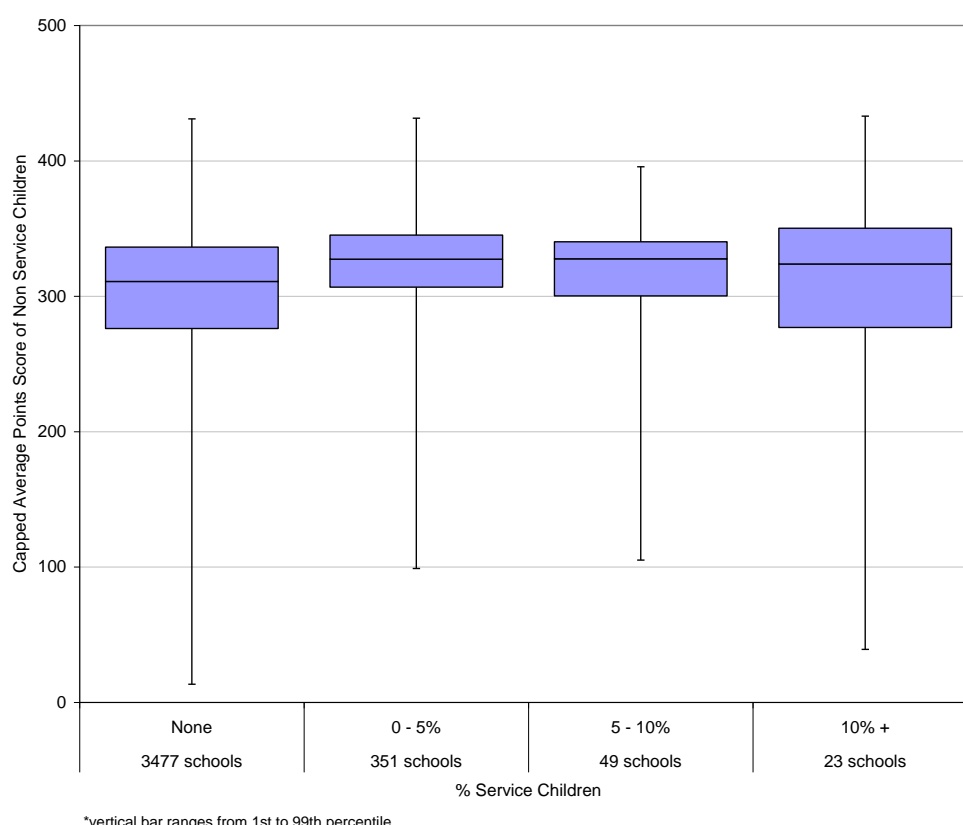
5.2.1 Capped Average Point Scores

Chart 5.1 shows the range of school average capped point scores²⁶ for **non-service** pupils, split by varying percentages of service children; Chart 5.2 shows the equivalent chart for service children.

²⁵ An explanation of a boxplot can be found in Annex D.

²⁶ Using a best 8 GCSE/ equivalents capped average point score measure.

Chart 5.1: Boxplot of School Average Capped Point Score of Non-Service Children, 2009



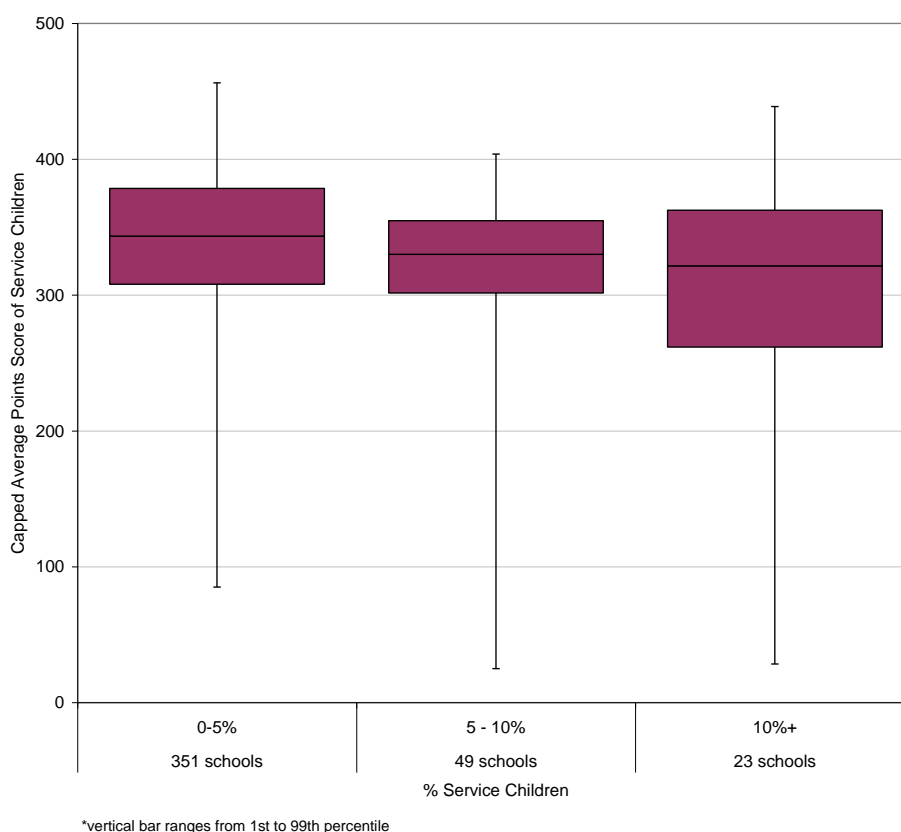
For schools where 0-5%, 5-10% or 10%+ of their cohort were service children, the average score (median) of their non-service peers (as depicted by the line in the middle of each blue box) was higher. This means that, on average, non-service children tend to do slightly better in these schools than in schools where there are no service children in their cohort. However, the spread of results in each banding is wide, which can be seen from the range of the vertical black lines.

Chart 5.2 displays a slightly different pattern for service children's average point scores: the median is slightly higher for schools with 0-5% service children and falls for schools with more service children than this. Comparing Charts 5.1 and 5.2, it can be seen that the average (median) point scores for service children are generally similar to or slightly higher than those for non-service children in each banding. This is despite the fact there is a slight fall in the service children's average point score in schools with more than 5% service children.

In summary, these charts show that the presence and proportion of service children has little impact on the attainment of non-service children at Key Stage 4, although service children's performance is generally slightly higher.²⁷

²⁷ Equivalent boxplots for attainment at Key Stage 2 are provided in the appendix for chapter 5

Chart 5.2 Boxplot of School Average Capped Point Score of Service Children, 2009



5.2.2 Contextualised Value-Added Scores

The boxplots in Charts 5.1 and 5.2 only show raw attainment outcomes; however, there are other circumstances that currently explain why some pupils perform better than others – for example, prior attainment, deprivation and having a special educational need. Contextual factors are taken into account in the CVA methodology that was discussed in the previous chapter and the use of CVA scores allows us to assess how a pupil has progressed between two Key Stages compared with other similar pupils nationally.

Chart 5.3 shows the range of school average CVA scores for **non-service** children in schools, again split by the percentage of service children within those schools. The average values lie close to 1000, the national average, for all categories. Therefore, there is very little change in the average scores of non-service children according to the percentage of service children in schools. This suggests that the presence and proportion of service children in schools does not appear to have an effect on the progress of their peers between Key Stages 2 and 4. The range of scores may initially appear particularly wide for schools with no service children, but this is inevitable given the larger number of schools.

Chart 5.3 Boxplot of Average CVA scores of Non-Service Children in Schools, 2009

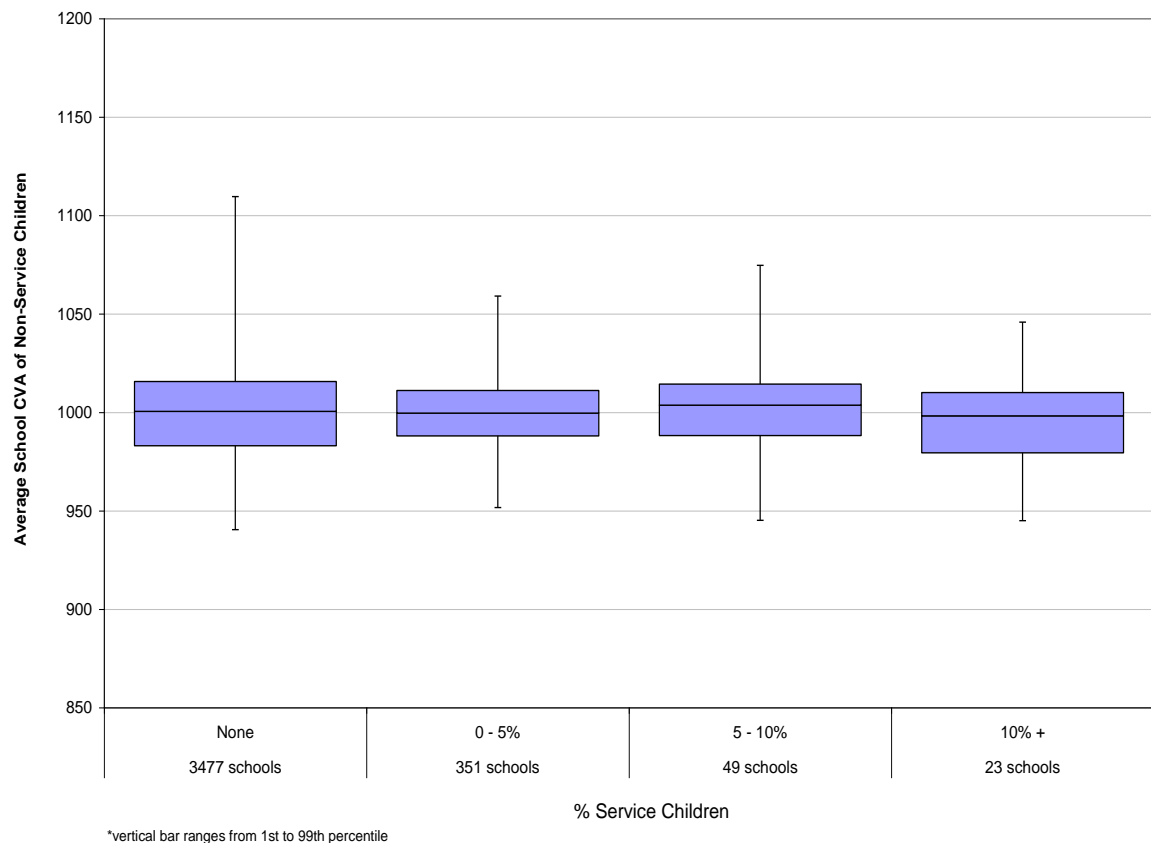
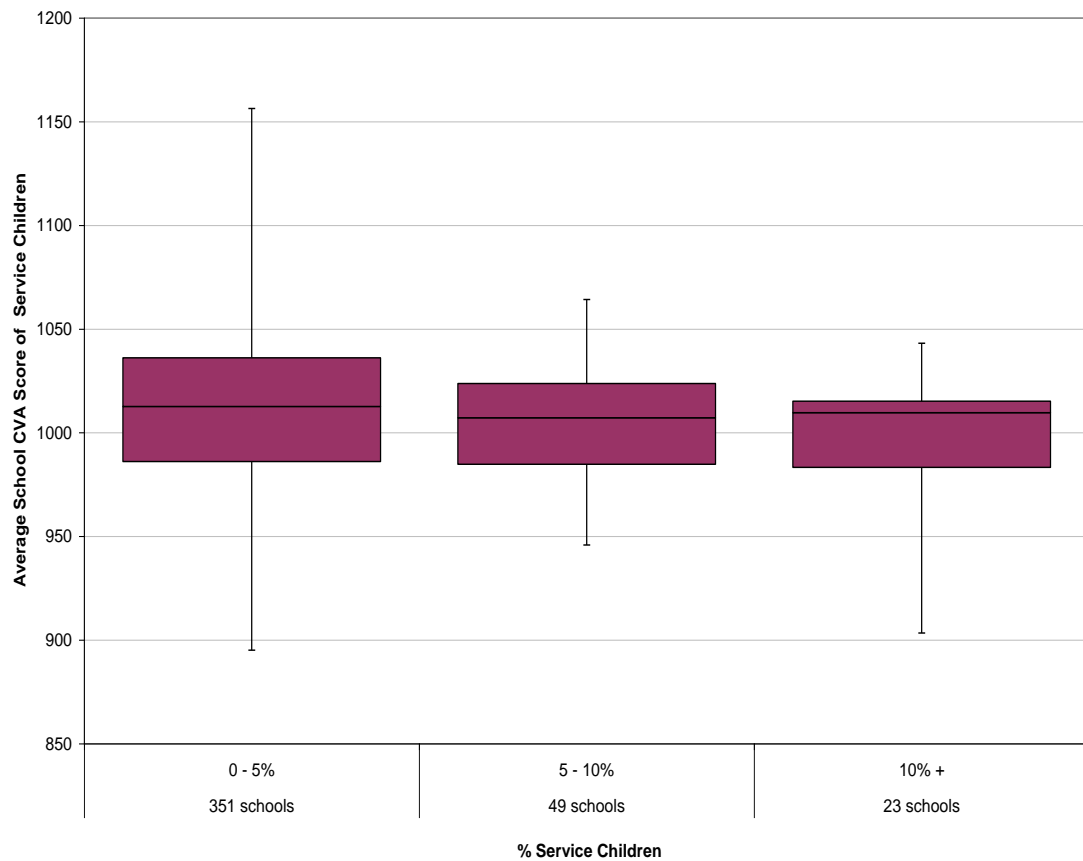


Chart 5.4 provides the equivalent chart for **service** children: the average CVA scores for service children in schools by varying concentration of service children. The average is above 1000, the national average, for all three categories, and higher than for the equivalent non-service child categories in Chart 5.3. This suggests that when prior attainment and other contextual factors are taken into account, service children tend to progress better than their peers between Key Stage 2 and 4, for each grouping of % service children banding. The proportion of service children in the cohort does not seem to have an impact.

Chart 5.4: Boxplot of Average CVA scores of Service Children in Schools, 2009



*vertical bar ranges from 1st to 99th percentile

6. What are the Characteristics of Service Children Educated Overseas?

Summary

- In 2009, 8,500 service children were educated overseas;
 - Service children who are educated overseas tend to be younger than service children educated in England - more than a quarter were in nursery and reception years and just over half were in Primary school;
 - Data on the characteristics of service children educated overseas is sparse. However, information on the special educational need status of overseas service children shows they are less likely to have an identified SEN than service children in England;
 - The attainment of overseas service children is broadly similar, if not a little higher, than that of service children in English schools;
 - At Key Stage 1, 80% of overseas service children achieved the expected level in maths, compared to 77% of service children in English schools; the equivalent percentages for KS1 English were 70% and 64% respectively;
 - At Key Stage 2, service children educated overseas attained similar results to service children in English schools, with both groups outperforming non-service children.
-

6.1 Introduction

In some cases, the children of service personnel stationed overseas are educated in schools run by Service Children's Education (SCE). SCE is an Agency of the Ministry of Defence and is dedicated to the education of the children of Her Majesty's Armed Forces, MoD Personnel and sponsored organisations stationed overseas. These schools follow the English National Curriculum, administer national assessments and public examinations, and are inspected by Her Majesty's Inspectorate (HMI). Teachers in SCE schools must have recognised UK professional qualifications and the majority are recruited specially from the United Kingdom for service in SCE schools (MoD website, accessed 2010).²⁸

SCE schools are situated in nine countries: Belgium, Belize, Brunei, Cyprus, Falkland Islands, Germany, Gibraltar, Italy and the Netherlands: and together are attended by more than 10,000 children (White et al., 2009).²⁹ Data on the characteristics of children educated in SCE schools are collected via the

²⁸ MoD website (Accessed June 2010) – Service Children's Education page
<http://www.mod.uk/DefenceInternet/DefenceFor/ServiceCommunity/Education/sce/>

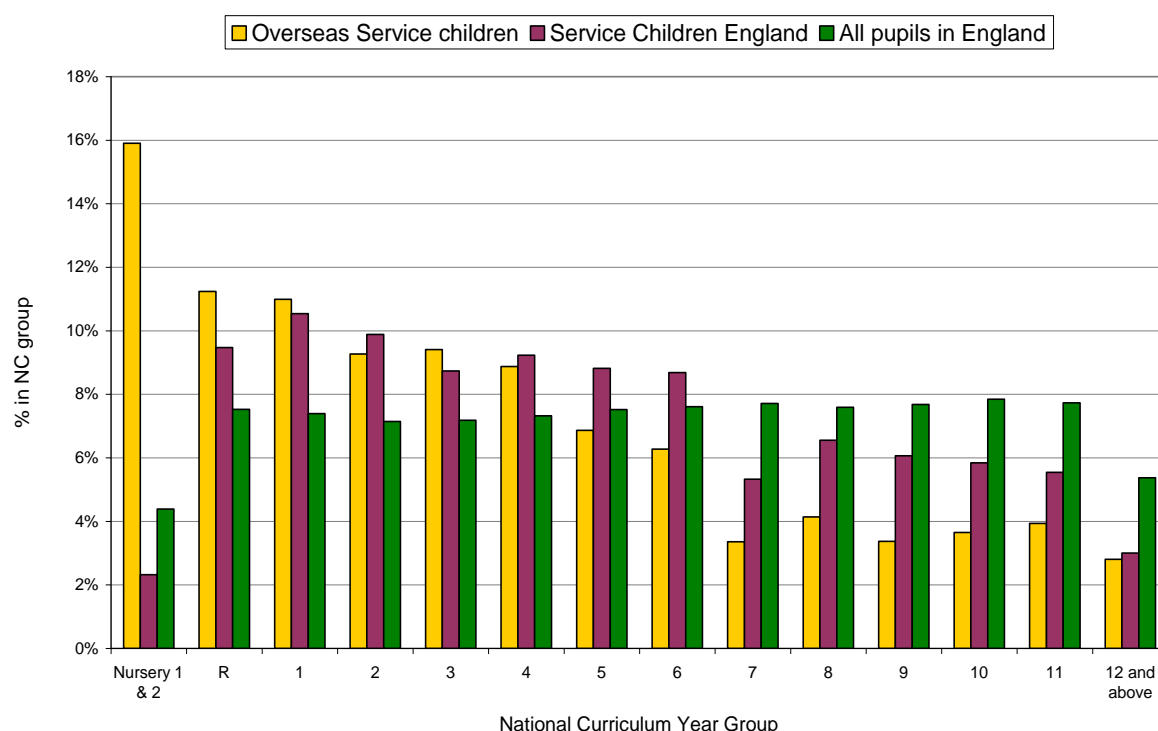
²⁹ Taken from *Service Children's Education: Survey of Parental Views*
http://www.nfer.ac.uk/nfer/research/projects/service-childrens-education/service-childrens-education_home.cfm

school census. This chapter looks at the characteristics of those service children educated overseas and at their attainment at Key Stage 1 and Key Stage 2; DfE does not hold Key Stage 4 data for SCE schools.

6.2 Numbers and Characteristics of Service Children Educated Overseas

In 2009, around 8,500 service children were educated overseas. More than a quarter (2,300) of these were in nursery and reception years and just over half were in primary school years 1 to 6. Chart 6.1 below compares the age profiles of service children educated overseas to the profile of service children educated in English maintained schools.

Chart 6.1: Age profiles of service children educated overseas, service children educated in English maintained schools and all pupils in English maintained schools, 2009



As shown in the introduction to this topic note, the age profile of service children educated in England is much younger than the overall profile. This pattern is even more evident for service children educated overseas. There is a big drop off between primary and secondary school (years 6 and 7). Around 1 in 5 service children educated overseas are of secondary age compared to around a third of those service children educated in maintained schools in England.

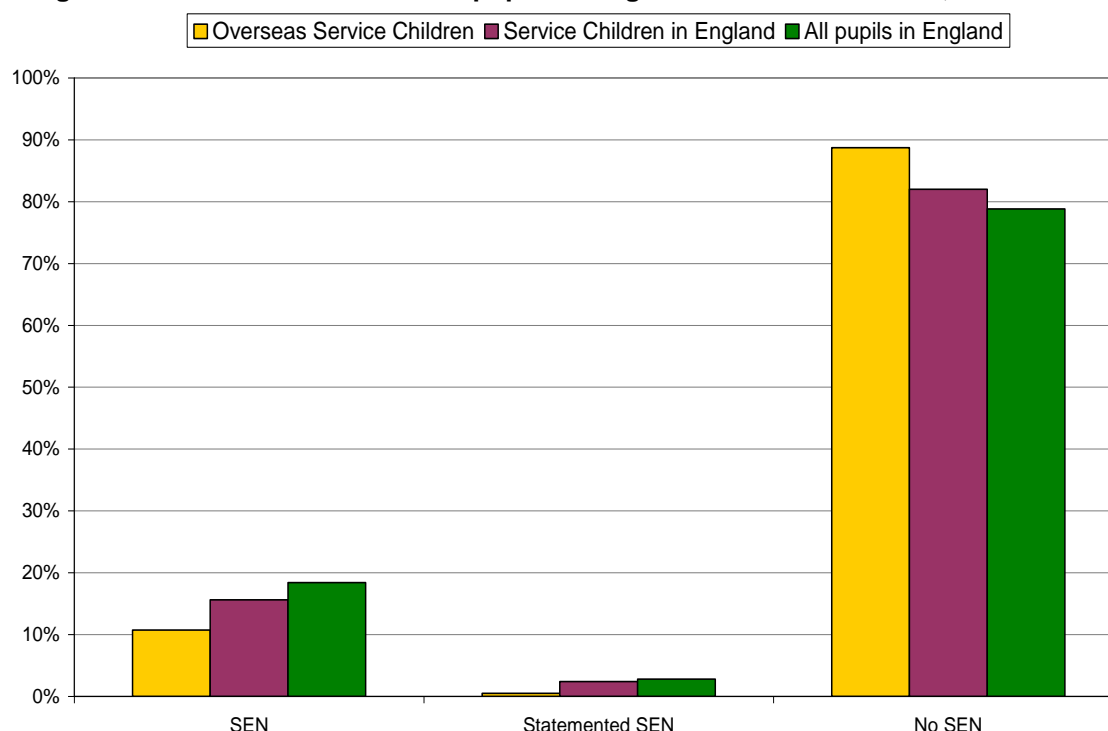
The above chart suggests that armed forces children may be under-represented in nurseries in England. It may be that accessing nursery provision in England is difficult for armed forces families, with their particular

circumstances. Guidance for local authorities published by the previous Government recognised this may be an issue.³⁰ Alternatively, the figures may reflect that nurseries are not always reporting whether or not they have service children and so service children are undercounted rather than under represented.

Data on the characteristics of service children educated overseas is sparse. For obvious reasons, England or UK based indices of deprivation are not applicable to children living overseas. The DfE does hold information on the special educational need (SEN) status of overseas service children. However, SCE do not have to follow the SEN Code of Practice to identify school action, school action-plus and statemented pupils. Therefore, SEN data may not be directly comparable. Furthermore, not all service children are educated in SCE schools.

Chart 6.2 shows that service children educated overseas are less likely to have an identified SEN than service children in England, who in turn are less likely to have an identified SEN than non-service children. However, we would expect lower overall SEN rates for service children overseas as they tend to be younger and SEN rates are lower for younger children. Therefore, this is not strictly a like-for-like comparison.

Chart 6.2: SEN status of service children educated overseas, service children educated in English maintained schools and all pupils in English maintained schools, 2009



³⁰ "Securing Sufficient Childcare: Statutory guidance for local authorities in carrying out their childcare sufficiency duties" [DCSF-00274-2010](#)

6.3. The Attainment of Service Children Educated Overseas

6.3.1. Key Stage 1

Chapter 3 showed that service children achieved slightly higher at KS1 maths and English than their non-service child peers. Charts 6.3 and 6.4 show the KS1 attainment of service children educated overseas compared to that of service children in England and all children in England. Overseas service children perform slightly better than their England based peers. 80% of overseas service children achieved the expected level in maths as compared to 77% of service children in English schools. Overseas service children did particularly well in KS1 English. Not only did a slightly higher proportion achieve the expected level (70% compared to 64% of England based service children), but a much larger proportion achieved the maximum level possible: 23% compared to 13%.

Chart 6.3: Attainment in KS1 maths of service children educated overseas, service children educated in English maintained schools and non-service children in English maintained schools, 2009

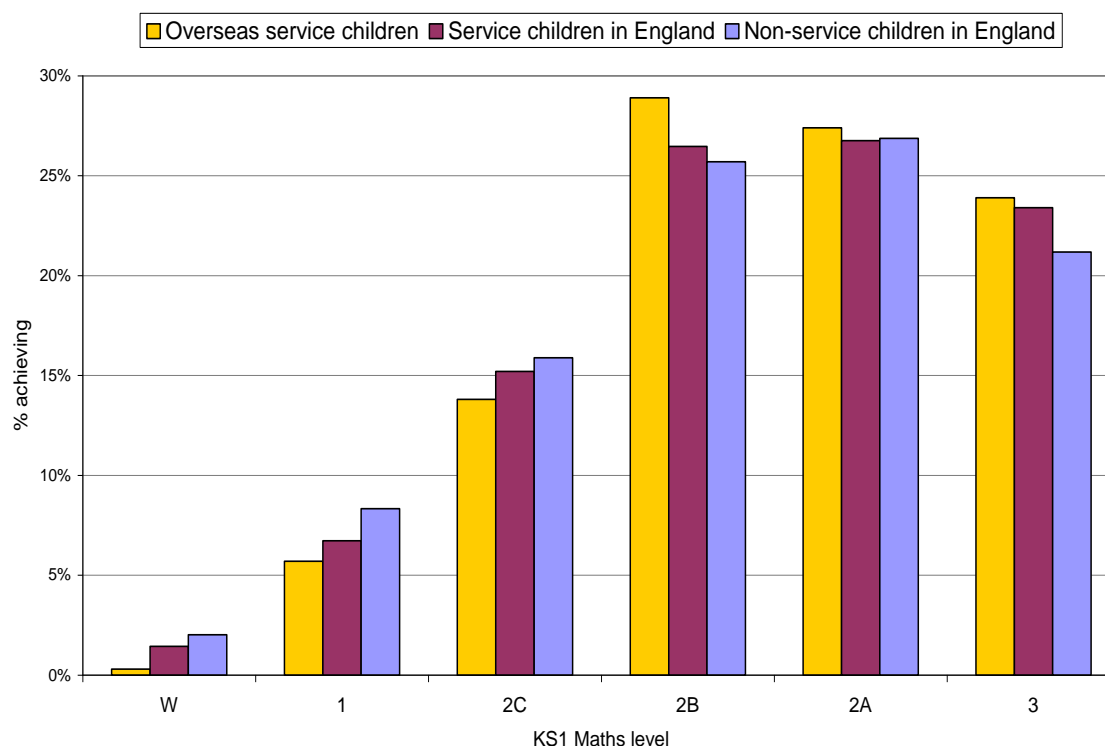
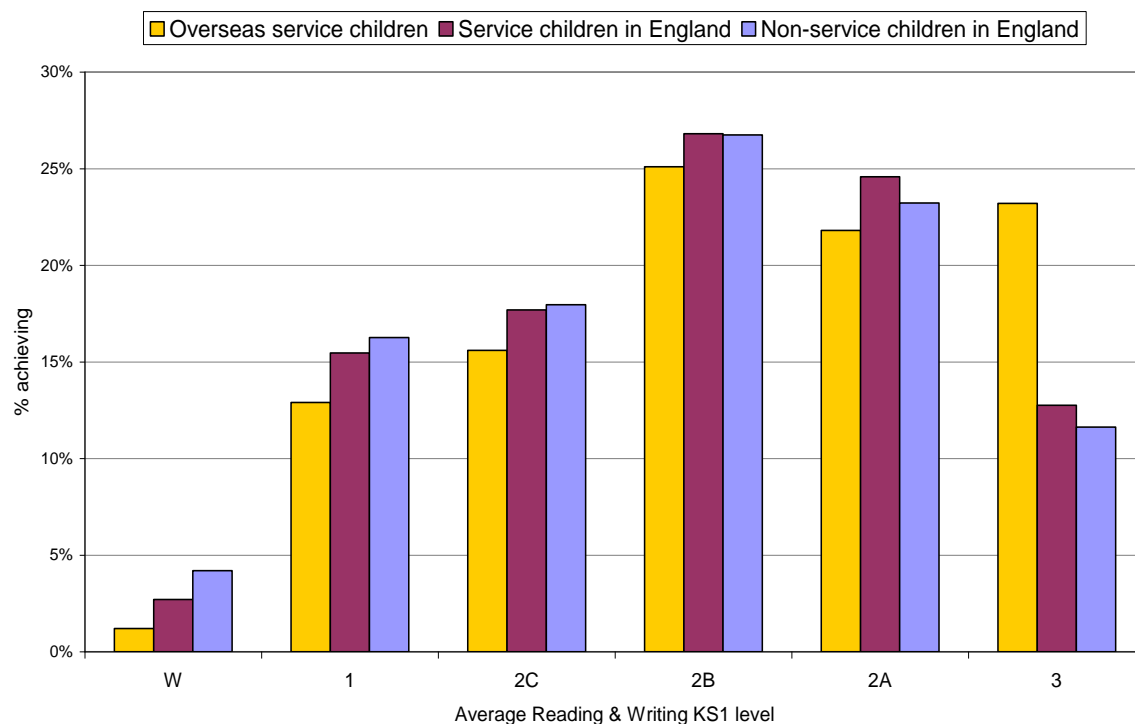


Chart 6.4: Attainment in KS1 English of service children educated overseas, service children educated in English maintained schools and non-service children in English maintained schools, 2009



6.3.2 Key Stage 2

Charts 6.5 and 6.6 show the KS2 attainment of overseas service children compared to that of service children in England and non-service children. Service children educated overseas attain similar results to service children in English schools at Key Stage 2, with both groups outperforming non-service children. For example, 83% of overseas and England-based service children achieved a level 4 (expected level) or above in English compared to 80% of non-service children. In maths, a slightly higher proportion of overseas service children achieved a level 4 or above than service children in England, but service children in England were more likely to achieve a level 5.

Chart 6.5: Attainment in KS2 English of service children educated overseas, service children educated in English maintained schools and non-service children in English maintained schools, 2009

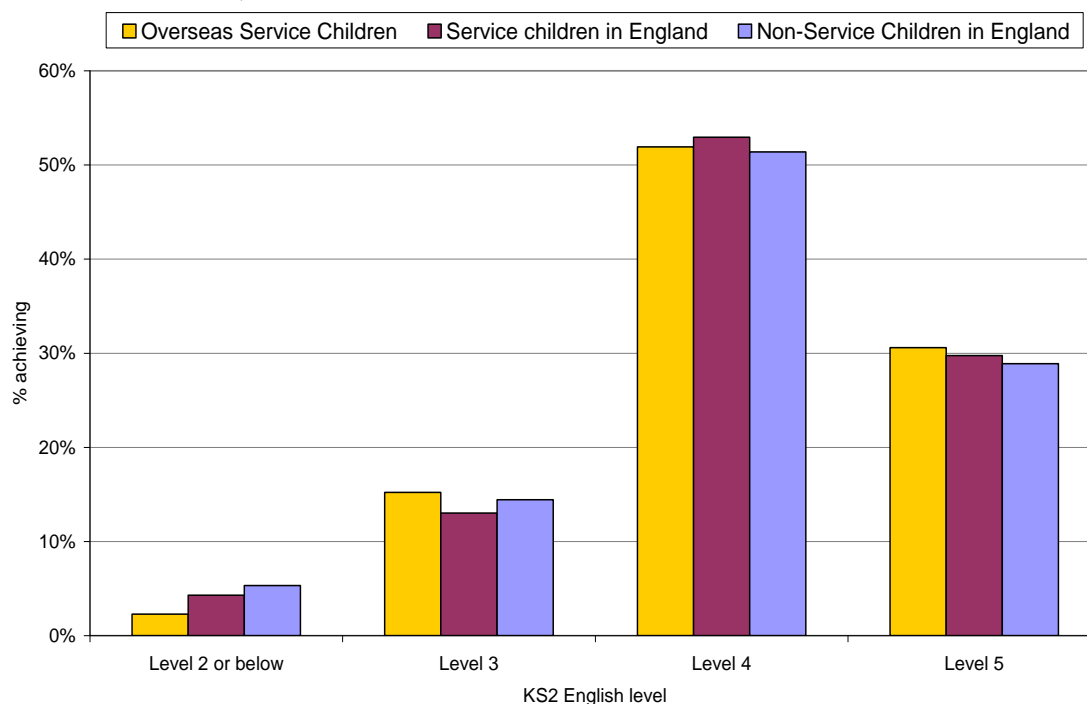
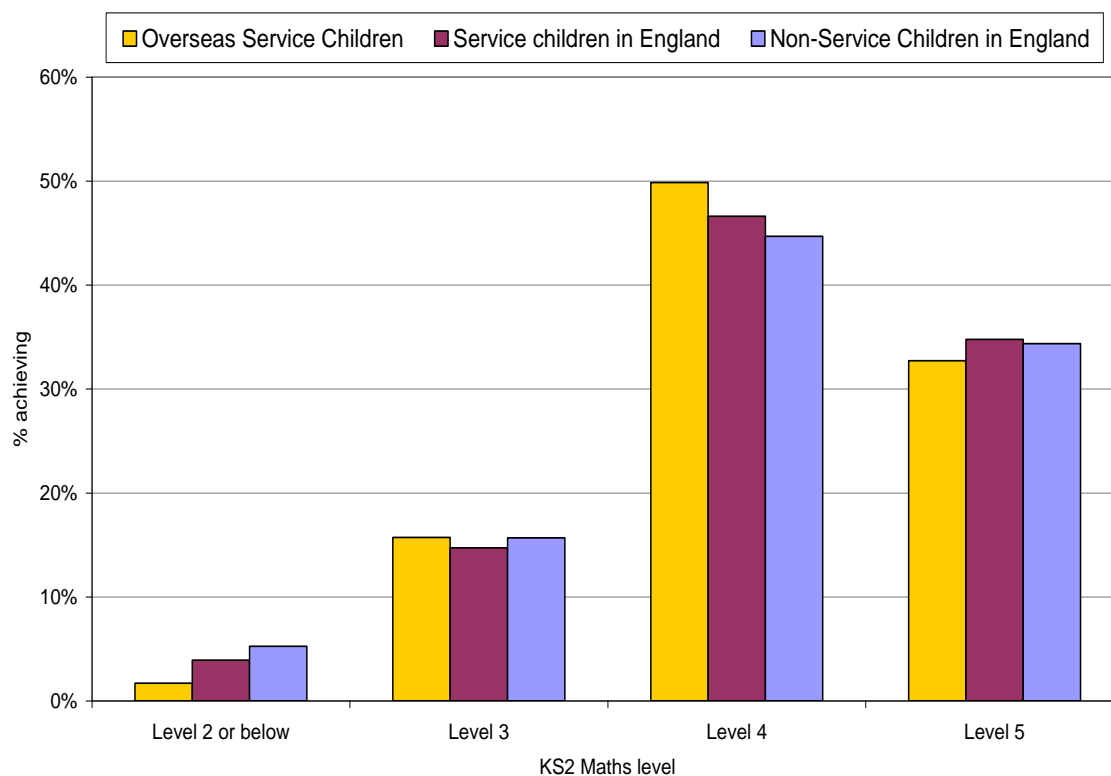


Chart 6.6: Attainment in KS2 maths of service children educated overseas, service children educated in English maintained schools and non-service children in English maintained schools, 2009



Conclusions

Chapter 1 considered the international and UK research evidence on service children's educational performance and suggested further research is needed to better understand the effects of parental deployment. Research evidence relating to the impact on service children's education is mixed; one study suggested older children and girls are most likely to suffer the most when a parent is deployed overseas. Older youths were found to have more problem behaviours such as fighting and, although girls were found to have fewer problems in school and with friends, they reported more anxiety than boys. However, there is a large body of evidence that explains the positive aspects of being a service child; for example, many service children do achieve high levels of attainment and they often build strong bonds in their communities, shouldering extra responsibility while their serving parent is away.

Chapter 2 then turned to consider the characteristics and distribution of service children across England. Local authority analyses showed that Hampshire and Wiltshire had the highest numbers of service children at both the end of Key Stage 2 and Key Stage 4 in 2009. When considering pupil characteristics, service children were found to be less likely to be deprived than their non-service peers, as assessed by free school meal eligibility and IDACI: a measure of the deprivation of an area in which a child lives. Service children were also generally less likely to be identified as having a special educational need; however, similar proportions of service and non-service children were seen to have a SEN statement. On movement between schools, service children were more likely to move than their peers in both Primary and Secondary School: 58% of service children changed school during Key Stage 2 compared with 38% of non-service children; at secondary school 6% of service children changed school during their GCSE years compared with 2% of non service children.

Chapter 3 then provided the attainment outcomes service children achieved in 2009. A higher proportion of service children achieved a good level of achievement in nearly all of the 13 scales, with the exception of emotional development, on the Early Years Foundation Stage Profile. At Key Stage 1 and Key Stage 2, slightly higher percentages of service children achieved the expected level in English and Mathematics compared to their peers; and, at GCSE, a greater percentage of service children achieved the 5+ A*-C and 5+ A*-C including English & Mathematics thresholds compared with their peers. However, the picture was variable at Local Authority level.

After controlling for prior attainment, demographic factors and pupil mobility, service children were still found to perform better than their peers. However, mobile service children were still disadvantaged and did not perform as well as their non-mobile peers. Interestingly, after only controlling for prior attainment and demographic factors (and not pupil mobility), service children were found to perform similarly to their peers. Moving schools frequently can severely disrupt a service child's education, as **Chapter 4** addressed. Mobile service children performed better on average than their mobile non-service

peers at Key Stage 2 and Key Stage 4: 32% of mobile service children during Key Stage 4 achieved the 5+ A*-C GCSE grades including English and maths threshold compared with 21% of their mobile peers, for example. However, they attained less well than non-mobile service children at the end of both examined Key Stages. 59% of non-mobile service children achieved the expected threshold at the end of Key Stage 4, for example.

Chapter 5 considered the effects service children have on their peers. Service children were present in 938 maintained primary schools in England at the end of Key Stage 2 in 2009 (6% of all maintained primary schools); the equivalent figure was 423 (11%) of all maintained secondary schools at the end of Key Stage 4. The presence and proportion of service children at the end of Key Stage 4 showed little impact on the average attainment and progress of their non-service peers. In schools with service children, service children were seen to have slightly higher average capped point scores than non-service children. Service children were also generally seen to make more progress than non-service children once prior attainment and characteristics were taken into account. However, no differential impact on their peers' performance was seen with increased concentrations of service children in the cohort.

Finally, **Chapter 6** addressed the characteristics and attainment of service children educated overseas. In 2009, 8,500 service children were educated abroad and service children who are educated overseas tend to be younger than service children educated in England: more than a quarter were in nursery and reception years and just over half were in Primary school. Data on the characteristics of service children educated overseas is sparse. The attainment of overseas service children was broadly similar, if not a little higher, than that of service children in English schools. At Key Stage 1, 80% of overseas service children achieved the expected level in maths, compared to 77% of service children in English schools; the equivalent percentages for KS1 English were 70% and 64% respectively. At Key Stage 2, service children educated overseas attained similar results to service children in English schools, with both groups outperforming non-service children.

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ANNEX A: Comparison of Service Children between 2008 & 2009

Summary

- The number and proportion of pupils identified as service children increased between 2008 and 2009;
 - The increase is likely to reflect better reporting by schools as opposed to a real increase;
 - The characteristics and attainment of those identified as service children in 2008 were very similar to the characteristics and attainment of service children in 2009;
 - When tracking pupils' status under the service child identifier for 2009 back to 2008, there was a large degree of correlation between the two years. Approximately 80% of service children at the end of Key Stages 1, 2 and 4 in 2009 were identified as service children in 2008 as well; the large majority of the rest were identified as non-service children in 2008 rather than the return being refused or unknown.
-

A1 Comparison between 2008 and 2009

A1.1 Introduction

Information on service children was first collected in the annual school census in 2008. The introduction of a new data item in the school census can result in under reporting due to a lack of knowledge about the flag and problems identifying the correct groups of pupils. Some schools may not even be aware of who their service children are. 2009 was the second year the information was collected, and the main scope of this topic note is to present the 2009 data. Despite underreporting, it is useful to compare the 2009 data with data from 2008. The comparison shows that although service children were less likely to be identified in 2008, the characteristics and attainment of those identified were very similar to the characteristics and attainment of those identified in 2009.

A1.2 Numbers of Service Children

Between 2008 and 2009 the numbers of service children identified increased. Table A1.1 shows the number of service children identified in 2008 and 2009 at the end of the Early Years Foundation Stage Profile (EYFSP) and at the end of Key Stages 1, 2, and 4. With the exception of EYFSP, the 2009 figures are slightly higher than the 2008 figures at the end of KS1, KS2 and KS4. The figures hint that service children were less likely to be identified at the end of KS4 in 2008 as compared to KS1 and KS2. At the end of KS4, the number has increased by around a quarter from 1,580 to 2050, compared to increases of around 10 percent at KS1 and KS2.

Table A1.1: Numbers of service children identified at end of EYFSP and Key Stages 1, 2 and 4 in 2008 and 2009

	Service Children in 2008	Service Children in 2009
EYFSP	3,450 (0.6%)	3,300 (0.6%)
Key Stage 1	3,200 (0.6%)	3,550 (0.7%)
Key Stage 2	2,800 (0.5%)	3,150 (0.6%)
Key Stage 4	1,580 (0.3%)	2,050 (0.4%)

Figures are for pupils in maintained mainstream & special schools in England; percentage of total cohort shown in brackets.

A1.3 Distribution of Service Children

Service children were identified in 423 schools at Key Stage 4 in 2009 (11% of all maintained secondary schools); in 2008 service children were identified in 338 schools (9% of all maintained secondary schools). This suggests some schools that were not identifying service children in 2008 are now doing so.

A1.4 Characteristics of Service Children

Household and neighbourhood deprivation

In 2008, as in 2009, service children were much less likely to be claiming free school meals and much less likely to live in deprived neighbourhoods. For example, across Key Stages 1, 2 and 4 in both 2008 and 2009, fewer than 1 in 20 service children lived in the 25% most deprived neighbourhoods while around half lived in the 25% least deprived areas.

Special Educational Needs

The 2008 data confirms the 2009 picture that service children are less likely to have an identified special educational need.

Mobility

The proportion of service children at the end of KS4 identified as changing school (mobile) in years 10 and 11 hardly changed between 2008 and 2009. Similarly, the relative attainment of mobile and non-mobile service children compared to their non-service children counterparts was unchanged. At Key Stage 4, 6% of service children were defined as mobile in 2009 compared to 7% in 2008. In 2009, 32% of mobile service children achieved 5 A*- C including English & Maths compared to 21% of mobile non-service children; in 2008 these figures were 30% and 19% respectively.

A1.5 Attainment

Those identified as service children in 2008 performed similarly or better than their peers and continued to do so in 2009. Table 2 shows the proportions of service children and non-service children attaining key threshold measures

across the Key Stages.

Table A1.2: Attainment of Service Children at EYFSP, Key Stages 1, 2 and 4 in 2008 and 2009

Key Stage	Attainment	Service Children 2008	Non Service Children 2008	Service Children 2009*	Non Service Children 2009*
EYFSP	% achieving a Good Level of Development	51	49	53 (+2)	52(+3)
Key Stage 1	% achieving Level 2B or more in Maths	75	74	77 (+2)	74 (0)
	% achieving Level 2B or more in Reading & Writing	61	61	64 (+3)	62 (+1)
Key Stage 2	% achieving Level 4 or more in Maths	80	78	81 (+1)	79 (+1)
	% achieving Level 4 or more in English	85	81	83 (-2)	80 (-1)
Key Stage 4	% achieving 5 A*-C GCSEs/equivalents including English & Maths	53	48	56 (+3)	50 (+2)

NB Figures are for pupils in maintained mainstream & special schools in England

*With percentage change from 2008 showed in brackets

A2 Tracking 2009 Service Children's Status back to 2008

The NPD can be used to track pupils' status over time. Using this we can consider those pupils who were identified as service children in 2009 and consider what their status was under their 2008 identifier.

A2.1 Key Stage 1

Of those who were identified as service children in 2009, 83% of them were also identified as service children in 2008. 16% were listed as non-service children in 2008, 0.4% of responses were refused and 0.6% were 'unknown'. The large majority who refused to specify in 2009 had also refused to specify in 2008 (91%).

Table A2.1: Service child identifier for those at the end of Key Stage 1 in 2009 tracked from year 2 status in 2008

		Service child in 2009			
		Non-service child	Service child	Refused	Unknown
Pupils taking Key Stage 1, 2009					
Service Child in 2008	Non-service child	99.7%	16.2%	6.2%	25.8%
	Service child	0.1%	82.8%	0.0%	0.1%
	Refused	0.0%	0.4%	90.8%	0.0%
	Unknown	0.2%	0.6%	3.1%	74.1%

Percentages sum to 100 for columns

A2.2 Key Stage 2

Of those who were identified as service children in 2009, 83% of them were also identified as service children in 2008. 16% were listed as non-service children in 2008, 0.3% of responses were refused and 0.3% were 'unknown'. The large majority who refused to specify in 2009 had also refused to specify in 2008 (86%).

Table A2.2: Service child identifier for those at the end of Key Stage 2 in 2009 tracked from year 5 status in 2008

		Service child in 2009			
		Non-service child	Service child	Refused	Unknown
Pupils taking Key Stage 2, 2009					
Service Child in 2008	Non-service child	99.8%	16.3%	13.3%	21.8%
	Service child	0.1%	83.2%	0.0%	0.0%
	Refused	0.0%	0.3%	85.6%	0.0%
	Unknown	0.2%	0.3%	1.1%	78.2%

Percentages sum to 100 for columns

A2.2 Key Stage 4

Of those who were identified as service children in 2009, 79% of them were also identified as service children in 2008. 18% were listed as non-service children in 2008, 0.1% of responses were refused and 3% were 'unknown'. The large majority who refused to specify in 2009 had also refused to specify in 2008 (91%).

Table A2.1: Service child identifier for those at the end of Key Stage 4 in 2009 tracked from year 5 status in 2008

		Service child in 2009			
		Non-service child	Service child	Refused	Unknown
Pupils taking Key Stage 4, 2009					
Service Child in 2008	Non-service child	99.4%	17.7%	5.9%	22.4%
	Service child	0.0%	79.0%	0.0%	0.0%
	Refused	0.0%	0.1%	90.9%	0.0%
	Unknown	0.6%	3.1%	3.1%	77.6%

Percentages sum to 100 for columns

ANNEX B: Contextualised Value Added

B1.1 Contextualised Value-Added Scores

Each year CVA (contextualised value added) methodology generates a set of pupil 'predictions' that are based on prior attainment and adjusted to take account of other factors observed to impact on performance and which are outside a school's control. The 'predictions' simply reflect what is happening nationally that year. Each pupil's CVA score is the difference between their actual and 'predicted' attainment and these scores are averaged to get to a school level score (or, in this case, all service children's scores are averaged). Characteristics taken into account in the CVA model that have been shown to impact on pupil performance are: SEN, EAL, Ethnicity, FSM, IDACI, Gender, Age, Mobility, and being in care.

For this analysis the average CVA scores (which reflect the progress made) of service children and non-service children were compared. Mobility was then also considered when looking at average CVA.

Table B1.1 shows the average CVA scores for service and non-service children between Key Stages 1 and 2. CVA scores are centred around a national average of 100. As the range of the confidence intervals for both service and non-service contain the national mean of 100, we can say that the CVA scores of both groups are not significantly different from the national average. Therefore, when contextual factors are taken into account at Key Stage 2, service children perform similarly to their peers.

Table B1.1 Key Stage 1-2 Average CVA scores

	Lower CI	CVA score	Upper CI
Non service children	100.01	99.95	99.91
Service children	100.09	99.90	99.89

Table B1.2 shows the average CVA scores between Key Stages 2 and 4. This time, CVA scores are centred around a national mean of 1000. As the lower confidence interval is above 1000 for service children, this means that the average CVA scores for service children are significantly above the mean. Therefore, service children are seen to make more progress when prior attainment and contextual factors are accounted for. Note that the difference in CVA scores between service children and non-service children (5.6 points) is similar to the service child effect observed in chapter 3 (7.0 points).

Table B1.2 Key Stage 2-4 Average CVA scores

	Lower CI	CVA score	Upper CI
Non service children	1000.93	1001.12	1001.32
Service child	1004.04	1006.69	1009.35

Table B1.3 splits this data further to consider the CVA scores for mobile and non-mobile service and non-service children at Key Stage 2. The results show that only non-mobile non-service children have an average CVA score

significantly above the mean. This means that, on average, non-mobile non-service children perform better than the other three groups when prior attainment and contextual factors are taken into account. Mobile service children and mobile non-service children both have CVA scores not significantly different from the mean.

Table B1.3 Key Stage 1-2 Average CVA scores for Mobile & Non-Mobile Pupils

	Lower CI	CVA score	Upper CI
Non Mobile Non service children	100.03	100.04	100.05
Non Mobile service children	99.83	99.96	100.10
Mobile Non service children	99.80	99.81	99.82
Mobile service children	99.73	99.85	99.96

Tables B1.4 and B1.5 consider the CVA of these groups for (i) those who were mobile in years 10/ 11 of their secondary education and (ii) those who were mobile at non-standard times in years 7-9.

Table B1.4 Key Stage 2-4 Average CVA scores for Mobile & Non-Mobile Pupils in Years 10/11

Student joined in latest two academic years (years 10 and 11)?	Lower CI	CVA score	Upper CI
Non Mob Non SC	1000.99	1001.18	1001.38
Non Mobile SC	1002.68	1005.29	1007.90
Mobile Non SC	998.58	1000.77	1002.97
Mobile SC	1009.42	1024.79	1040.15

Table B1.5 Key Stage 2-4 Average CVA scores for Mobile & Non-Mobile Pupils at a Non-Standard Time in Years 7, 8 or 9

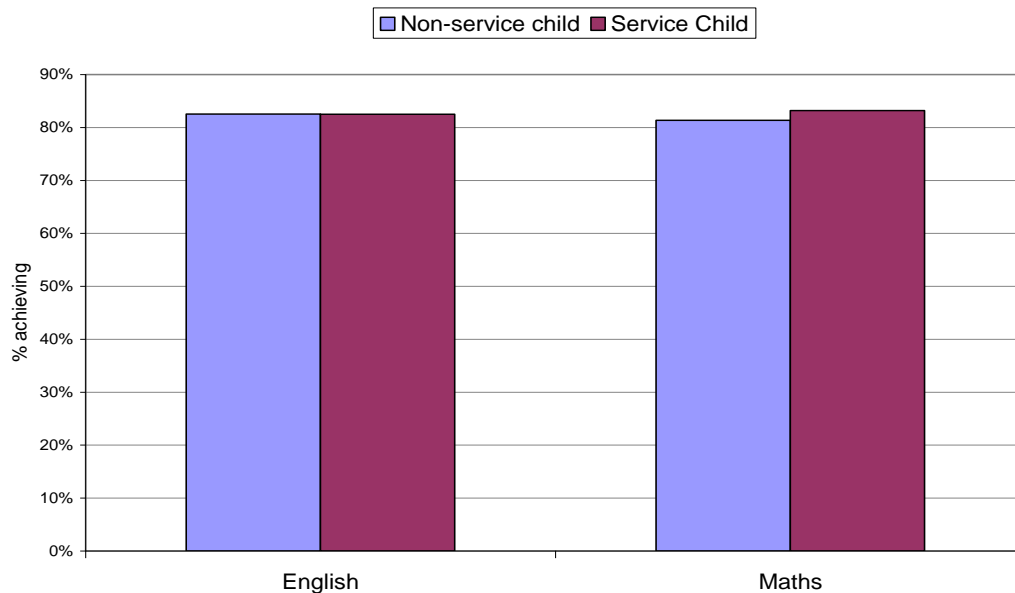
Student joined in any other month than July/Aug/Sep?	Lower CI	CVA score	Upper CI
Non Mob Non SC	1000.96	1001.16	1001.35
Non Mobile SC	1001.93	1004.71	1007.49
Mobile Non SC	1000.34	1001.49	1002.65
Mobile SC	1010.91	1018.5	1026.09

In Table B1.4 we see all groups have average CVA scores significantly above the mean except mobile non-service children, who had an average CVA score that was not significantly different from the mean. Interestingly, mobile service children had an average CVA score nearly 25 points above their mobile non-service peers, indicating they achieve, on average, 1 grade higher in 4 GCSE subjects than their mobile peers. A similar pattern is seen for those who were mobile in Years 7 to 9 although, here, mobile service children achieve an average CVA score that is 17 points higher than their mobile peers (equating to 1 grade higher is 3 subjects).

ANNEX C: Levels of Progress

Chart C1.1 shows that between Key Stage 1 and Key Stage 2 service children (identified in 2009) made similar levels of progress to non-service children in both English and Maths.

Chart C1.1 Proportions of Service Children and Non-Service Children Making 2 Levels of Progress Between Key Stage 1 and Key Stage 2, 2009



Charts C1.2 – C1.4 show that between Key Stage 2 and Key Stage 4, service children were more likely to make 3 levels of progress, and this holds even after controlling for KS2 prior attainment level.

Chart C1.2 Proportions of Service Children and Non-Service Children Making 3 Levels of Progress Between Key Stage 2 and Key Stage 4, 2009

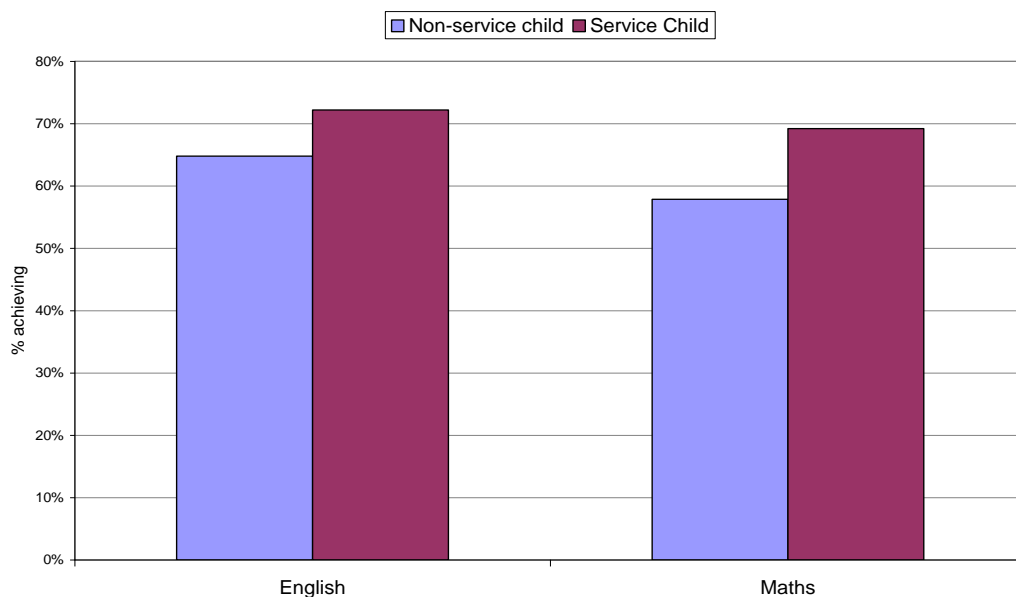


Chart C1.3 Proportions of Service Children and Non-Service Children Making 3 Levels of Progress in Maths Between Key Stage 2 and Key Stage 4, 2009

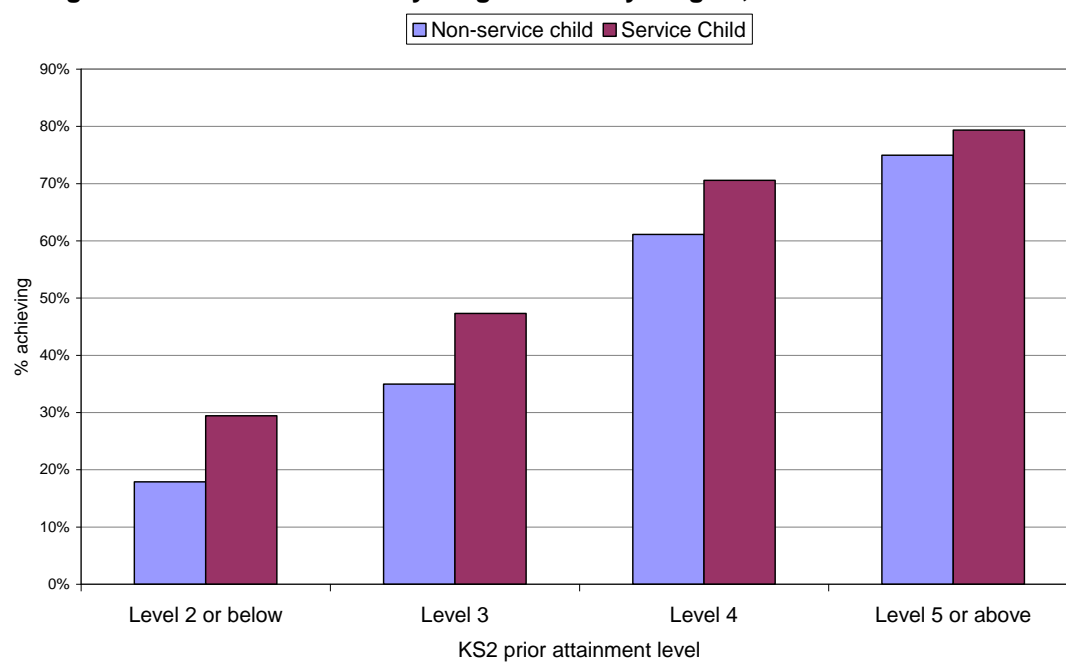
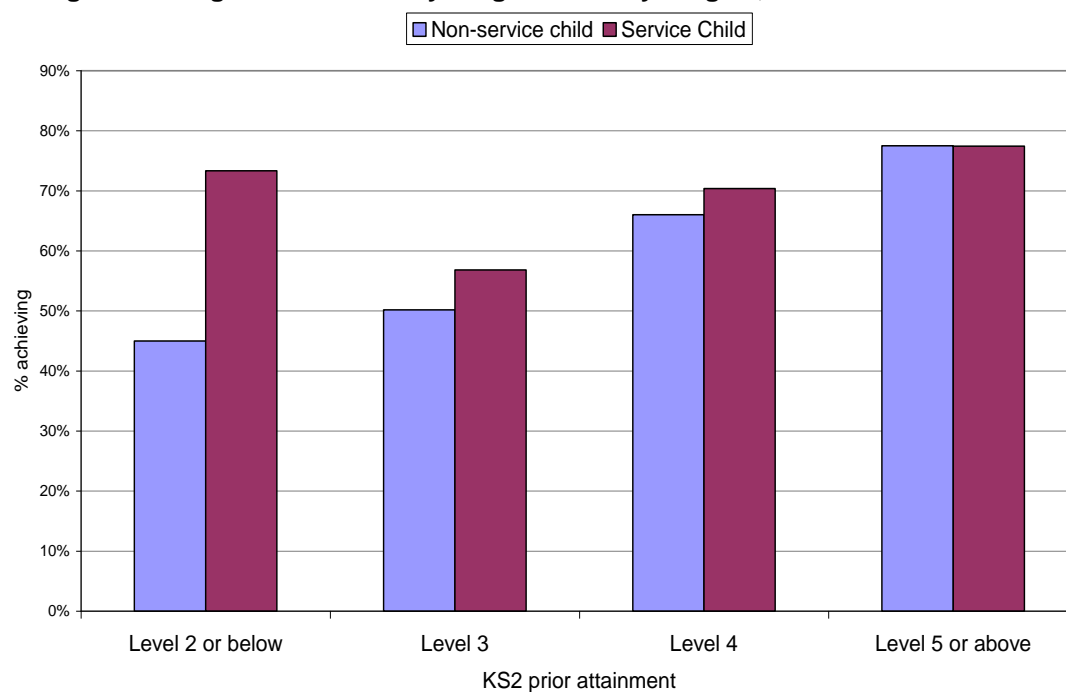
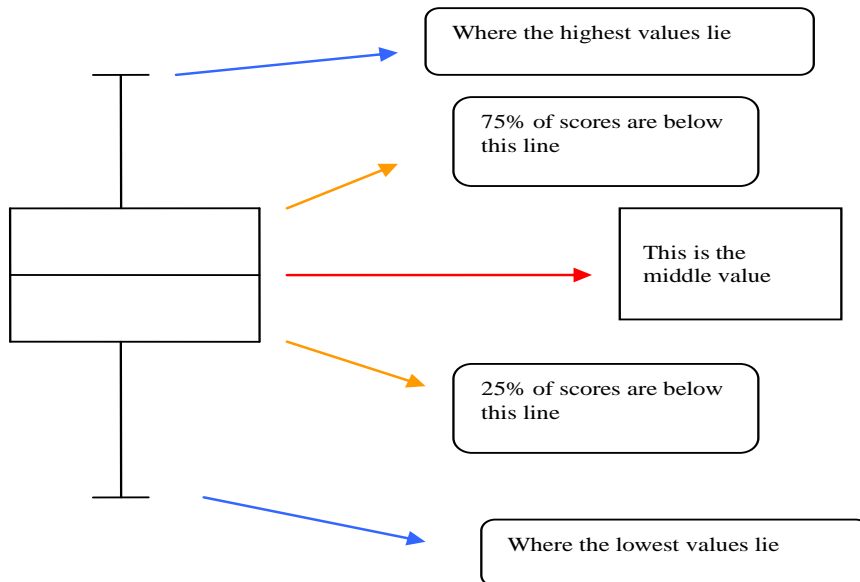


Chart C1.4 Proportions of Service Children and Non-Service Children Making 3 Levels of Progress in English between Key Stage 2 and Key Stage 4, 2009



ANNEX D – Explanation of a Boxplot

Chart D1.1 Explanation of a boxplot



Appendices

Chapter 2

Chart 2.1 Numbers of Service children at EYFSP by Local Authority, 2009

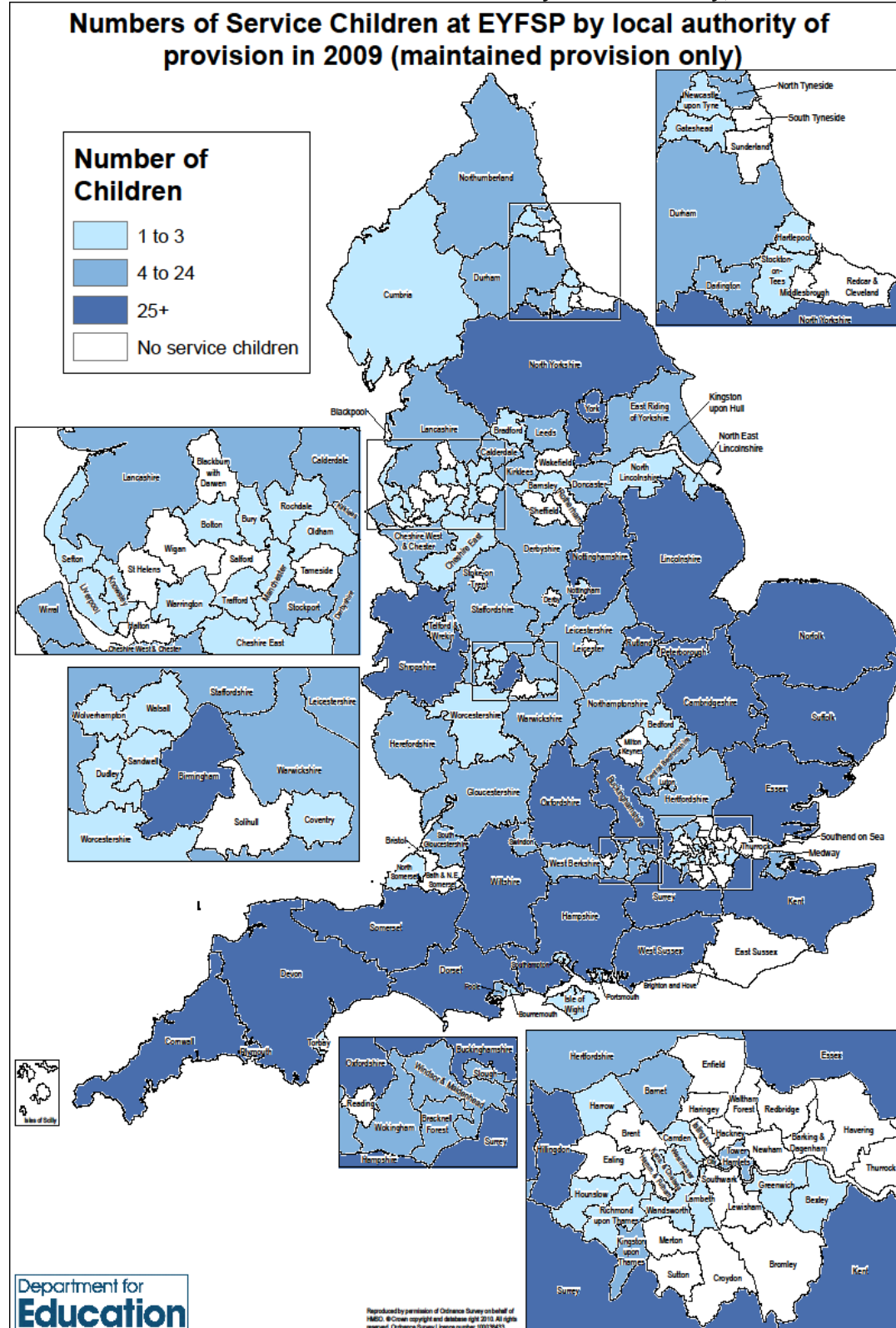
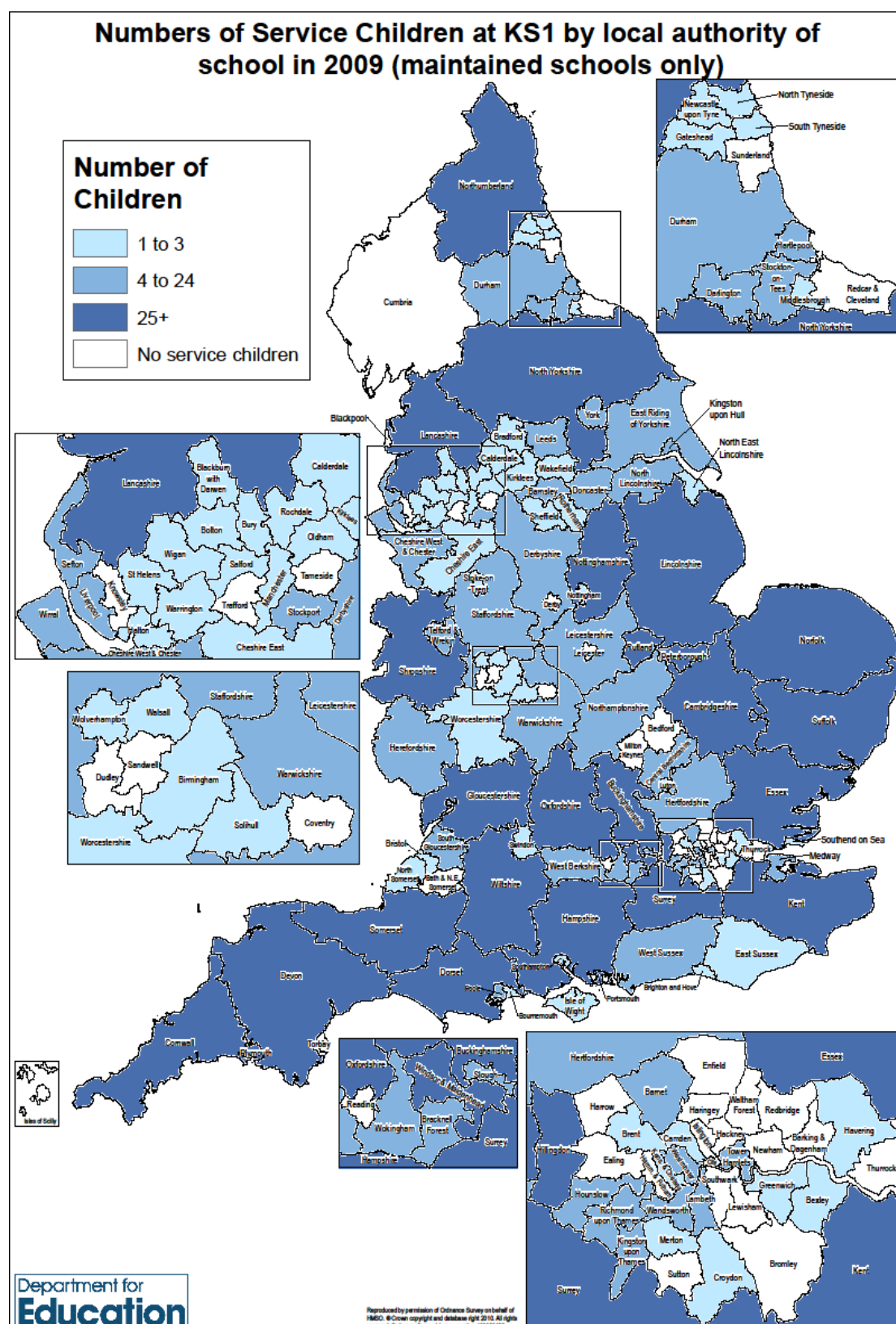


Chart 2.2 Numbers of Service Children at Key Stage 1 by Local Authority, 2009



Chapter 3

Table 3.1 CVA coefficients used in the KS2-4 2009 CVA model

Coefficients	2009 Key Stage 2-4 mainstream
(Constant)	284.559
KS2 fine grade average points score	-5.122
KS2english -KS2 average point score fine grades	-0.381
KS2maths -KS2 average point score fine grades	-0.014
Quadratic of KS2 Average Point Score	0.4016
In care at current school - no	0.000
In care at current school - yes	-26.185
Non-SEN	0.000
School Action	-30.741
Action+ / Statement	-70.963
pupil joined school after Sept Yr 10	-80.889
pupil joined school not in July /AUG/ Sept Yr 7- 9	-25.885
Male	0.000
Female	14.524
Age (within year)	-13.830
First language: English or believed to be English	0.000
First language: Other or believed to be other	-5.919
First language: Other or believed to be other*KS2APS	5.2212
First language: Other or believed to be other*Quadratic of KS2 APS	-0.1590
Income Deprivation Affecting Children Index score	-57.975
free school meal - no	0.000
free school - yes	-23.913
White British	0.000
Irish	-0.176
Traveller of Irish heritage	-104.872
Gypsy Roma	-65.940
Any other white background	14.064
White and Black Caribbean	0.482
White and Black African	10.667
White and Asian	10.220
Any other mixed background	10.345
Indian	27.553
Pakistani	21.289
Bangladeshi	27.703
Any other Asian background	30.026
Caribbean	17.969
Black African	33.558
Any other black background	15.983
Chinese	39.339
Any other ethnic group	25.013
Unclassified ethnic group	-1.938
free school meals (yes)*White British	0.000
free school meals (yes)*Irish	-0.6606
free school meals (yes)*Traveller of Irish heritage	68.6433
free school meals (yes)*Gypsy/ Roma	12.8898

free school meals (yes)*Any other white background	21.2507
free school meals (yes)*White and Black Caribbean	10.3191
free school meals (yes)*White and Black African	6.2767
free school meals (yes)*White and Asian	5.9030
free school meals (yes)*Any other mixed background	14.6233
free school meals (yes)*Indian	19.2597
free school meals (yes)*Pakistani	16.0331
free school meals (yes)*Bangladeshi	16.6502
free school meals (yes)*Any other Asian background	25.5240
free school meals (yes)*Caribbean	21.4097
free school meals (yes)*Black African	21.7768
free school meals (yes)*Any other black background	24.0432
free school meals (yes)*Chinese	28.4769
free school meals (yes)*Any other ethnic group	30.4824
free school meals (yes)*Unclassified ethnic group	7.9411
KS2 average point score of cohort	-0.034
KS2 standard deviation in cohort	-7.333
Var between schools (B)	410.115
Var within schools (W)	4852.826

Further information can be found on the Achievement and Attainment Tables website:

http://www.dcsf.gov.uk/performance/tables/schools_09/documents.shtml

Table 3.2 Service children as a coefficient in the CVA model - Output

***Step 1: School Effects**

*fixed effects with random intercept

*Run the model with school effect only

Log likelihood = -3284941.2 Prob > chi2 = 0.0000

scoreplusb~s	Coef.	Std. Err.	z	P>z	[95% Conf	Interval]
_lsc2a_1	11.43421	2.497585	4.58	0	6.539031	16.32938
_cons	399.3856	0.8332183	479.33	0	397.7525	401.0187
/sigma_u	45.53827	0.6032124			44.37121	46.73603
/sigma_e	101.8714	0.0980626			101.6793	102.0637
rho	0.1665448	0.003688			0.159418	0.173874

Step 2: Prior Attainment

*now control for prior attainment

*Run the model including prior attainment only

Log likelihood-ratio test of sigma_u=0: chibar2(01)= 7.5e+04 Prob>=chibar2 = 0.000

scoreplusb~s	Coef.	Std. Err.	z	P>z	[95% Conf	Interval]
_lsc2a_1	6.005333	1.837313	3.27	0.001	2.404266	9.6064
cvap2aps	5.31478	0.2516633	21.12	0	4.821529	5.808031
p2apssq	0.2498867	0.0049237	50.75	0	0.240236	0.259537
p2e_dev	3.031591	0.0720631	42.07	0	2.89035	3.172832
p2m_dev	1.224034	0.0766127	15.98	0	1.073876	1.374192
_cons	67.32285	3.196342	21.06	0	61.05814	73.58757
/sigma_u	23.52484	0.3225832			22.90101	24.16566
/sigma_e	75.05126	0.0722461			74.90979	75.19299
rho	0.0894614	0.0022404			0.08515	0.093933

Likelihood-ratio test of sigma_u=0: chibar2(01)= 3.7e+04 Prob>=chibar2 = 0.000

Step 3: Prior Attainment plus demographic variables

*Run the model including prior attainment and the demographic variables

Log likelihood = -3072396.9 Prob > chi2 = 0.0000

scoreplusb~s	Coef.	Std. Err.	z	P>z	[95% Conf	Interval]
_lsc2a_1	2.285582	1.724086	1.33	0.185	-1.093566	5.664729
p2apssq	0.3046048	0.0006115	498.1	0	0.303406	0.305803
p2e_dev	-0.3462396	0.0699744	-4.95	0	-0.483387	-0.209092
p2m_dev	0.160778	0.0715776	2.25	0.025	0.020489	0.301068
EAL_KS2prior	1.03209	0.672425	1.53	0.125	-0.285839	2.350018
EAL_KS2pri~d	-0.0785481	0.0136322	-5.76	0	-0.105267	-0.051829
ageinyr	-13.6978	0.332075	-41.25	0	-14.34865	-13.04694
idaci	-60.02826	0.7333713	-81.85	0	-61.46564	-58.59088
fsm	-25.0701	0.3745509	-66.93	0	-25.80421	-24.336
senps	-69.63543	0.3783145	-184.07	0	-70.37692	-68.89395
sena	-29.0937	0.3162875	-91.98	0	-29.71361	-28.47379

female	14.10121	0.2123279	66.41	0	13.68506	14.51737
flang	47.46301	8.141357	5.83	0	31.50625	63.41978
incareev	-32.97307	1.239433	-26.6	0	-35.40231	-30.54383
wiri	-0.9086803	1.798265	-0.51	0.613	-4.433216	2.615855
wirt	-106.3196	10.15824	-10.47	0	-126.2294	-86.40984
wrom	-66.67961	4.864472	-13.71	0	-76.2138	-57.14542
woth	12.28044	0.8390719	14.64	0	10.63589	13.92499
mwbc	-1.020856	1.053325	-0.97	0.332	-3.085336	1.043623
mwba	9.249275	2.141416	4.32	0	5.052176	13.44637
mwas	9.315647	1.402532	6.64	0	6.566734	12.06456
moth	8.317375	1.097832	7.58	0	6.165665	10.46909
aind	26.49654	0.8684223	30.51	0	24.79446	28.19861
apkn	18.73173	0.9290518	20.16	0	16.91083	20.55264
aban	24.95457	1.472902	16.94	0	22.06774	27.84141
aoth	27.12713	1.353617	20.04	0	24.47409	29.78018
bcrb	15.61948	0.9827496	15.89	0	13.69332	17.54563
bafr	30.39357	1.001466	30.35	0	28.43073	32.35641
both	12.8129	1.766744	7.25	0	9.350145	16.27566
chne	39.05131	1.865065	20.94	0	35.39585	42.70677
ooth	22.34276	1.461093	15.29	0	19.47907	25.20645
uncla	-3.154099	0.9638579	-3.27	0.001	-5.043226	-1.264972
fsmwiri	1.190217	4.716166	0.25	0.801	-8.053299	10.43373
fsmwirt	59.4788	14.52688	4.09	0	31.00664	87.95096
fsmwrom	11.02049	7.458847	1.48	0.14	-3.598577	25.63956
fsmwoth	20.43265	1.855164	11.01	0	16.7966	24.06871
fsmmwbc	11.36971	2.201262	5.17	0	7.055311	15.6841
fsmmwba	5.636538	4.698158	1.2	0.23	-3.571683	14.84476
fsmmwas	6.915257	3.617962	1.91	0.056	-0.175818	14.00633
fsmmoth	14.47312	2.563323	5.65	0	9.449099	19.49714
fsmaind	19.74228	2.141186	9.22	0	15.54563	23.93892
fsmapkkn	16.72027	1.32348	12.63	0	14.1263	19.31424
fsmaban	19.11696	2.011741	9.5	0	15.17402	23.0599
fsmaoth	25.21258	2.953796	8.54	0	19.42324	31.00191
fsmbcrb	23.06568	2.021753	11.41	0	19.10311	27.02824
fsmbafr	22.36559	1.609178	13.9	0	19.21166	25.51952
fsmboth	23.54587	3.358934	7.01	0	16.96248	30.12926
fsmchne	27.28112	5.515855	4.95	0	16.47024	38.092
fsmooth	31.7957	2.324358	13.68	0	27.24004	36.35135
fsmuncla	8.750949	2.564403	3.41	0.001	3.724812	13.77709
_cons	189.8467	0.695605	272.92	0	188.4833	191.2101
/sigma_u	21.20809	0.2923548			20.64276	21.78891
/sigma_e	70.16108	0.0676386			70.02864	70.29378
rho	0.0837217	0.0021211			0.079642	0.087957

Step 4: Prior Attainment plus demographic variables plus mobility

*Run the model with prior attainment, demographic variables and mobility

Log likelihood = -3064472

Prob > chi2 = 0.0000

scoreplusb~s	Coef.	Std. Err.	z	P>z	[95% Conf.	Interval]
lsc2a_1	6.976155	1.699514	4.1	0	3.645168	10.30714
p2apssq	0.3012144	0.0006032	499.33	0	0.300032	0.302397
p2e_dev	-0.3304441	0.068959	-4.79	0	-0.465601	-0.195287
p2m_dev	0.1828952	0.0705396	2.59	0.01	0.04464	0.32115
EAL_KS2prior	0.7913484	0.6626689	1.19	0.232	-0.507459	2.090156
EAL_KS2pri-d	-0.0737158	0.0134344	-5.49	0	-0.100047	-0.047385
ageinyr	-13.37281	0.3272682	-40.86	0	-14.01425	-12.73138
idaci	-58.30405	0.7227059	-80.67	0	-59.72053	-56.88757
fsm	-23.49307	0.3694507	-63.59	0	-24.21718	-22.76896
senps	-68.92816	0.3728948	-184.85	0	-69.65902	-68.1973
sena	-29.70474	0.3117331	-95.29	0	-30.31573	-29.09376
female	14.62264	0.2092789	69.87	0	14.21246	15.03281
flang	49.91583	8.023237	6.22	0	34.19058	65.64109
incareev	-25.18754	1.223151	-20.59	0	-27.58487	-22.79021
wiri	-0.2832464	1.772153	-0.16	0.873	-3.756602	3.190109
wirt	-102.1125	10.01103	-10.2	0	-121.7338	-82.49128
wrom	-65.79	4.793934	-13.72	0	-75.18594	-56.39407
woth	14.22892	0.8270497	17.2	0	12.60793	15.84991
mwbc	0.3064594	1.038095	0.3	0.768	-1.728169	2.341088
mwba	10.85735	2.110405	5.14	0	6.721029	14.99366
mwas	9.88642	1.382193	7.15	0	7.177371	12.59547
moth	10.04361	1.081988	9.28	0	7.922947	12.16426
aind	27.04634	0.8557582	31.61	0	25.36909	28.7236
apkn	20.46236	0.9156063	22.35	0	18.66781	22.25692
aban	27.10584	1.451657	18.67	0	24.26065	29.95103
aoth	29.54545	1.334135	22.15	0	26.9306	32.16031
bcrb	17.10036	0.968472	17.66	0	15.20218	18.99853
bafr	33.3941	0.9872292	33.83	0	31.45916	35.32903
both	15.56085	1.74124	8.94	0	12.14809	18.97362
chne	39.61853	1.838012	21.56	0	36.01609	43.22097
ooth	24.705	1.440008	17.16	0	21.88264	27.52737
uncla	-1.793514	0.9498997	-1.89	0.059	-3.655283	0.068256
fsmwiri	1.211921	4.647759	0.26	0.794	-7.89752	10.32136
fsmwirt	63.93756	14.31631	4.47	0	35.87811	91.997
fsmwrom	13.88981	7.350725	1.89	0.059	-0.517343	28.29697
fsmwoth	19.49931	1.828262	10.67	0	15.91598	23.08263
fsmmwbc	10.42366	2.169349	4.8	0	6.171809	14.6755
fsmmwba	5.404927	4.630023	1.17	0.243	-3.669751	14.47961
fsmmwas	7.237634	3.565516	2.03	0.042	0.249351	14.22592
fsmmoth	14.39406	2.526141	5.7	0	9.442913	19.34521
fsmaind	19.44162	2.11015	9.21	0	15.30581	23.57744
fsmapkn	15.13976	1.304345	11.61	0	12.58329	17.69623
fsmaban	16.19223	1.982693	8.17	0	12.30622	20.07824
fsmaoth	25.22116	2.910952	8.66	0	19.5158	30.92652
fsmbcrb	21.39175	1.992498	10.74	0	17.48652	25.29697
fsmbafr	20.43571	1.585929	12.89	0	17.32735	23.54407
fsmboth	21.53128	3.310268	6.5	0	15.04327	28.01928
fsmchne	24.6937	5.43588	4.54	0	14.03957	35.34783
fsmooth	30.32574	2.290669	13.24	0	25.83611	34.81537
fsmuncla	7.685142	2.527221	3.04	0.002	2.731879	12.6384
mob1	-80.42133	0.6935383	-115.96	0	-81.78064	-79.06202
mob2	-25.43427	0.4484277	-56.72	0	-26.31317	-24.55537
_cons	194.0859	0.6849861	283.34	0	192.7433	195.4284
/sigma_u	20.75081	0.286205			20.19738	21.31942
/sigma_e	69.14371	0.0666577			69.01319	69.27448
rho	0.0826251	0.002097			0.078592	0.086812

Chapter 5

Chapter 5 provided analysis on whether the presence and proportion of service children had an impact on their peers' performance at Key Stage 4. The following boxplots provide the equivalent analyses for Key Stage 2 attainment.

Chart 5.1 shows little difference in the average point scores of non-service children by percentage of service children in the school, showing service children are having little effect on their peers' performance.

Chart 5.1 Boxplot of School Average Total Points Score of Non-Service Children at KS2, 2009

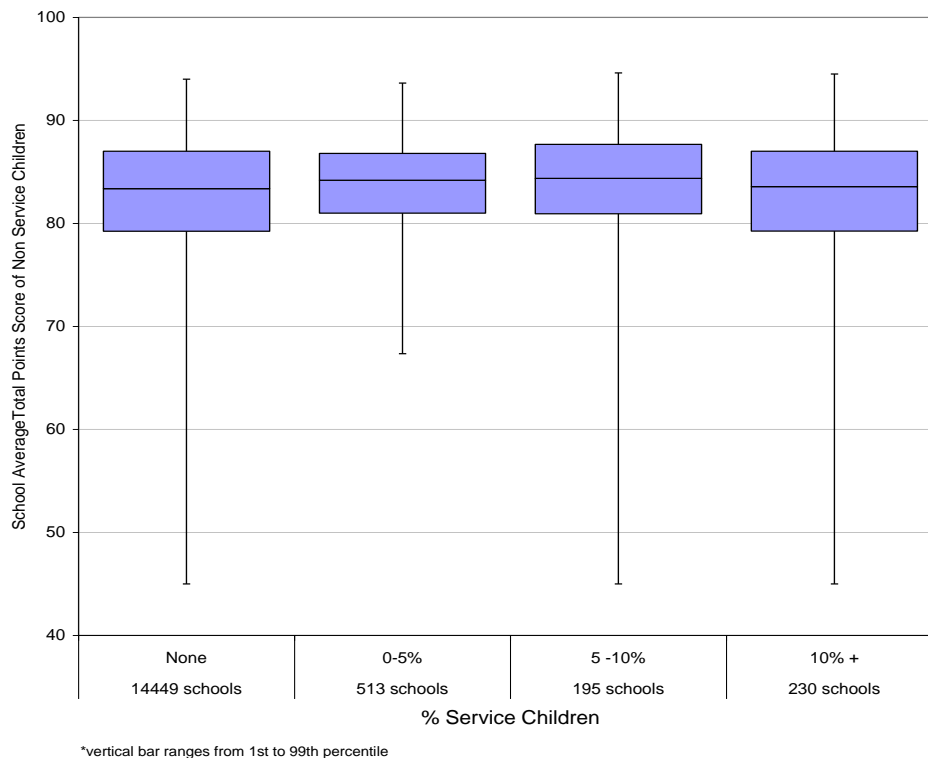
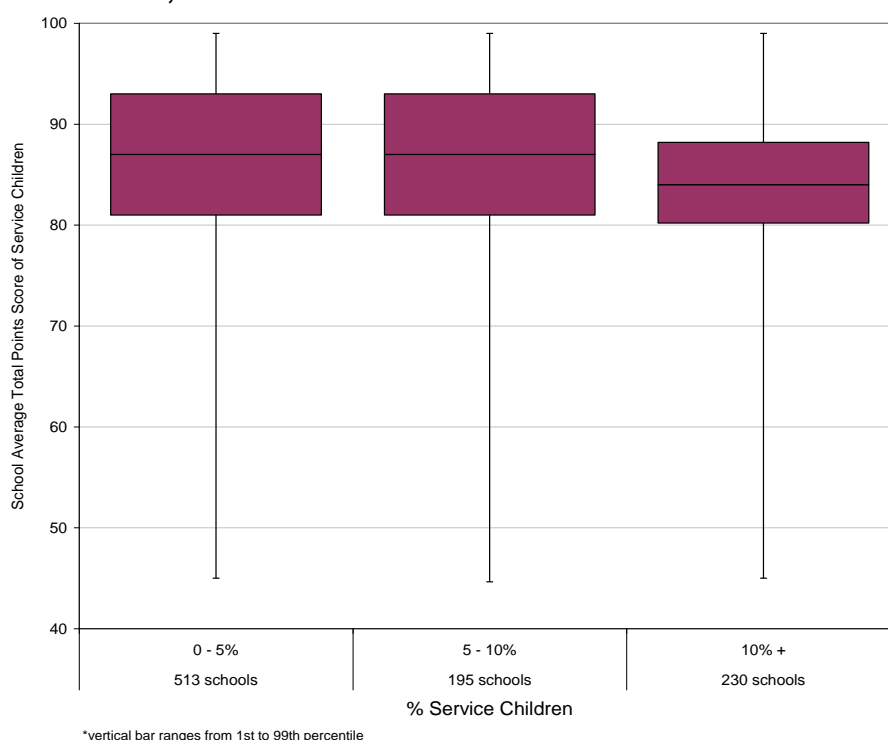


Chart 5.2 displays a slightly different pattern for service children's average point scores: the median is lower for schools with more than 10% service children.

Chart 5.2 Boxplot of School Average Total Points Score of Service Children at KS2, 2009



Charts 5.3 and 5.4 show that, once prior attainment and pupil context have been taken into account, the average CVA scores are relatively similar for each banding of service children within the school. This is the case for service and non-service children, although the average CVA score is marginally lower for schools with 10%+ service children.

Chart 5.3 Boxplot of School Average CVA scores of Non-Service Children at KS2, 2009

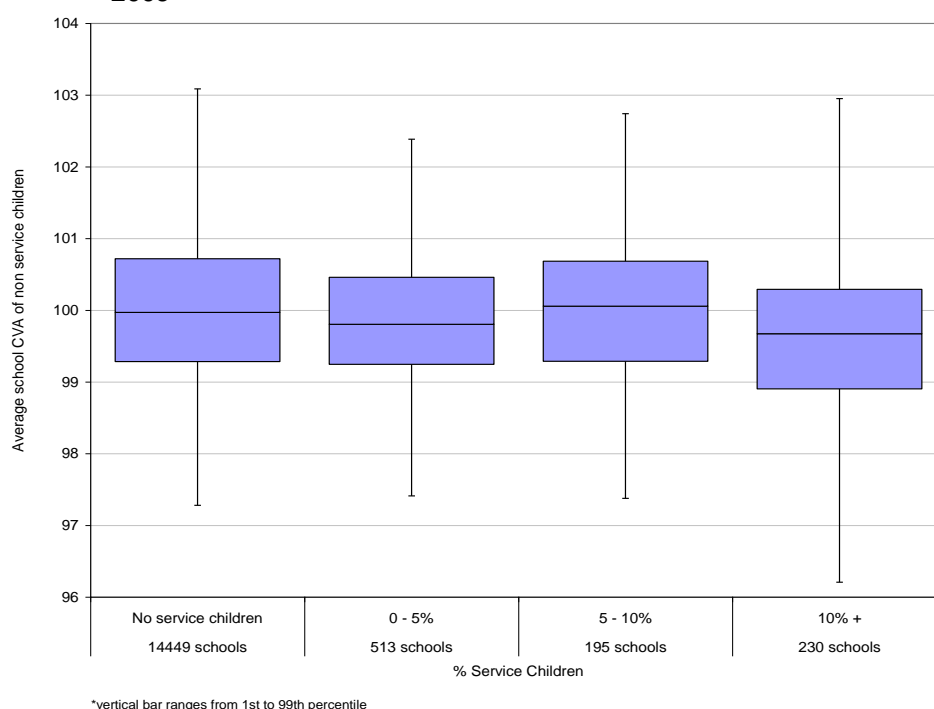
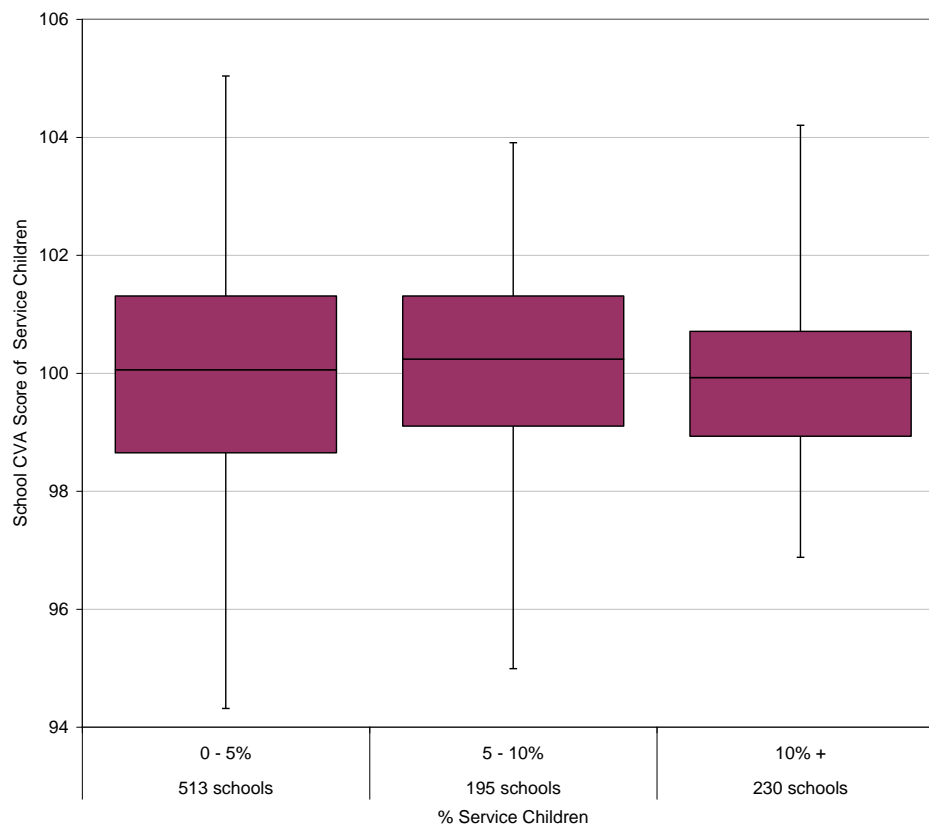


Chart 5.4 Boxplot of School Average CVA scores of Service Children at KS2, 2009



*vertical bar ranges from 1st to 99th percentile

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